ENVIRONMENTAL RISK AND INSURANCE:
WITH SPECIAL REFERENCE TO
THE EU ENVIRONMENTAL LIABILITY DIRECTIVE

by

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ENVIRONMENTAL RISK AND INSURANCE: WITH SPECIAL REFERENCE TO THE EU ENVIRONMENTAL LIABILITY DIRECTIVE

The thesis deals with the relation and interaction between environmental pollution and insurance. In our days, the adverse impact of industrial activities on human health, personal properties, natural resources and biodiversity; as well as the need for sustainable development, created a debate on appropriate policies and techniques aimed at improving the current level of environmental protection and preservation. Implementation of environmental policies needs environmental regulations and also some financial instruments. In this context, the first part of the thesis explains the major concepts, which are related to the issue. This part also consists of a chapter, which summarizes principle environmental insurance products. The second part of the thesis deals with the current position of environmental insurance in the U.S., EU Member States and Turkey. In this context, this part deals with environmental laws, which consist of compulsory financial security provisions and voluntary environmental insurance and reinsurance pools. The third and last part of the Thesis examines the EU Environmental Liability Directive dated 2004 in general and the place and possible role of insurance in the new environmental liability regime.

AVRUPA BİRLİĞİ ÇEVRE SORUMLULUK DİREKTİFİ'NE REFERANSLA ÇEVRE KİRLİLİĞİ RİSKİ VE SİGORTA

Bu tez, çevre kirliliği ve sigorta arasındaki ilişkiyi ve etkileşimi incelemektedir. Günümüzde sürdürülebilir kalkınmaya duyulan ihtiyaç yanında, endüstriyel faaliyetlerin insan sağlığı, mallar, doğal kaynaklar, biyolojik çeşitlilik üzerindeki olumsuz etkileri, mevcut çevre koruması seviyesinin daha ileriye götürülmesine yönelik politika ve tekniklerin tartışılmasını beraberinde getirmiştir. Çevre politikalarının uygulanması mevzuat düzenlemeleri yanında bazı finansal araçlara da ihtiyaç duymaktadır. Bu çerçevede mevcut tezin ilk bölümü konuya ilişkin temel kavramlara açıklama getirmekte ve başlıca çevre sigortası ürünlerini incelemektedir. Tezin ikinci bölümünde, çevre sigortalarının Amerika Birleşik Devletleri, Avrupa Birliği Üyesi ülkeler ve Türkiye'deki mevcut durumu, zorunlu finansal teminat hükümleri içeren çevre kanunları ve ihtiyari sigorta ve reasürans havuzları bakımından incelenmiştir. Tezin son bölümünde ise 2004 tarihli Avrupa Birliği Çevre Sorumluluk Direktifi ve bu Direktifle getirilen yeni çevre rejiminde sigortanın yeri ve rolü değerlendirilmektedir.

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LIST OF SYMBOLS/ABBREVIATIONS

Symbol	Explanation
ART	Alternative Risk Transfer Methods
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
D&O	Directors and Officers
CEA	European Insurance and Reinsurance Federation
CGL	Commercial General Liability
CPL	Contractors' Pollution Liability Insurance
EAP	Environmental Action Plan
EC	European Community
ECJ	European Court of Justice
EIL	Environmental Liability Policy
EU	European Union
GIE	Inter-company Partnership
GL	General Liability
GMOs	Genetically Modified Organisms
IMO	International Maritime Organization
IOPC Fund	International Oil Pollution Compensation Fund
M&A	Mergers and Acquisitions
NODS	Non-owned Disposal Sites
NRD	Natural Resource Damage
PARLL	Pollution and Remediation Legal Liability
P & I	The Protection and Indemnity
PLL	Pollution Legal Liability
PTP	Property Transfer Pollution Liability Insurance
QMV	Qualified Majority Voting
RCAE	Responsabilité Civile Atteinte a Lenvironnement
RCRA	Resource Conservation and Recovery Act
SIR	Self-insured Retention

1. INTRODUCTION

In our days, the adverse impact of industrial activities on human health, personal properties, natural resources and biodiversity; as well as the need for sustainable development created a debate on appropriate policies and techniques aimed at improving the current level of environmental protection and preservation. Implementation of environmental policies needs environmental regulations and also some financial instruments. In this context, environmental insurance products play an important role. In fact, only a generation ago, internationally, only a handful of insurance companies provided coverage for environmental risks and that coverage tended to be both narrow and expensive. Today's environmental insurance products are more comprehensive. But there are still some problems in covering all environmental risks.

Today, when some insurers provide insurance coverage for environmental risks on their own, others prefer to establish a "pool" with the participation of several companies. But in both cases, insurers and reinsurers prefer to act together. Because, environmental incidents occur less frequently than other business insurance claims, but the financial impact of an environmental incident can be severe.

The insurance industry always faces new risks and opportunities in the environmental field. In this context, after the publication of the EU Environmental Liability Directive in 2004, European insurers faced a new challenge. In fact, for the time being the Directive does not envisage a compulsory coverage but it states that Member States should take measures to encourage the development of financial security instruments, markets for insurance or other forms of cover. Moreover, the Directive requires the Commission to report in 2010 on the availability of such products and their costs and conditions. On the basis of this report, the Commission will be in a position to decide whether the Directive should be amended to establish a system of harmonized compulsory cover. All EU Member States have to transpose the Directive into their national laws until 30 April 2007. An actual need for insurance for the sustainability of the new regime and availability of needed insurance solutions will then clearly occur.

2. CONCEPTUAL FRAMEWORK

2.1. Environment

2.1.1. Definition of Environment and Environmental Risk

Environment can be defined as "the sum of all external conditions affecting the life, development and survival of an organism" (EPA Glossary, 2006). On the other hand, there are many other definitions.

The concept of "risk" may generally be understood as a threat to persons, property, or interests. From the actuarial point of view, "risk is the probability that a particular adverse event occurs during a stated period of time or results from a particular challenge where an adverse event is an occurrence producing harm" (Clarke, 2005).

Environmental risk can be defined as the potential for adverse effects on living organisms associated with pollution of the environment by effluents, wastes, emissions, or chemical releases; energy use; or the depletion of natural resources (EPA Glossary, 2006). There are many situations today in which we may need to consider whether harm to human health or damage to the environment could occur. This is an issue for governments and also for industries. Sometimes, environmental risk is understood to mean only the threat to the environmental commodities of water, soil, and air, as well as to flora and fauna. However, the contamination of environmental commodities or a change in their condition can lead to a threat to persons, property, and assets.

Two other terms, which should be mentioned here, are "environmental risk assessment" and "environmental risk management". Environmental risk assessment involves considering the likelihood and consequence of an adverse effect. On the other hand, environmental risk management involves identifying suitable and practicable measures to ensure that risks remain acceptable.

2.1.2. Environmental Risk Assessment

As I mentioned above, risk assessment is the process of estimating the likelihood and consequence of an adverse effect. Hence, environmental risk assessment involves an analysis of information on the environmental fate and behavior of chemicals in the environment (i.e. air, water and land) integrated with an analysis of information on their effects on human beings and ecological systems (Maltby, 2006).

In other words, environmental risk assessment is qualitative and quantative valuation of environmental status. This assessment is comprised of human health risk assessment and ecological risk assessment.

The human health risk assessment is a systematic process for the characterization of the potential adverse health effects of human exposures to environmental hazards. It is the estimation of the consequences of a possible dangerous event for human health and the probability that the consequences happen (CVR, 2006). On the other hand, ecological risk assessment is concerned with the effects of chemicals on non-human populations, communities and ecosystems.

Risk assessment is an important decision-making tool that can be used to identify existing problems and to predict potential risks of planned actions. It is useful both for prioritizing management and regulatory efforts and for evaluating the effectiveness of management actions that are implemented. Central to any risk assessment process is the distinction between hazard and risk. Whereas hazard is the ability of a substance to harm organisms, risk is the probability that harm will occur under a particular set of circumstances. A substance may be extremely hazardous, but if there is no environmental exposure, it will not present an environmental risk (Maltby, 2006).

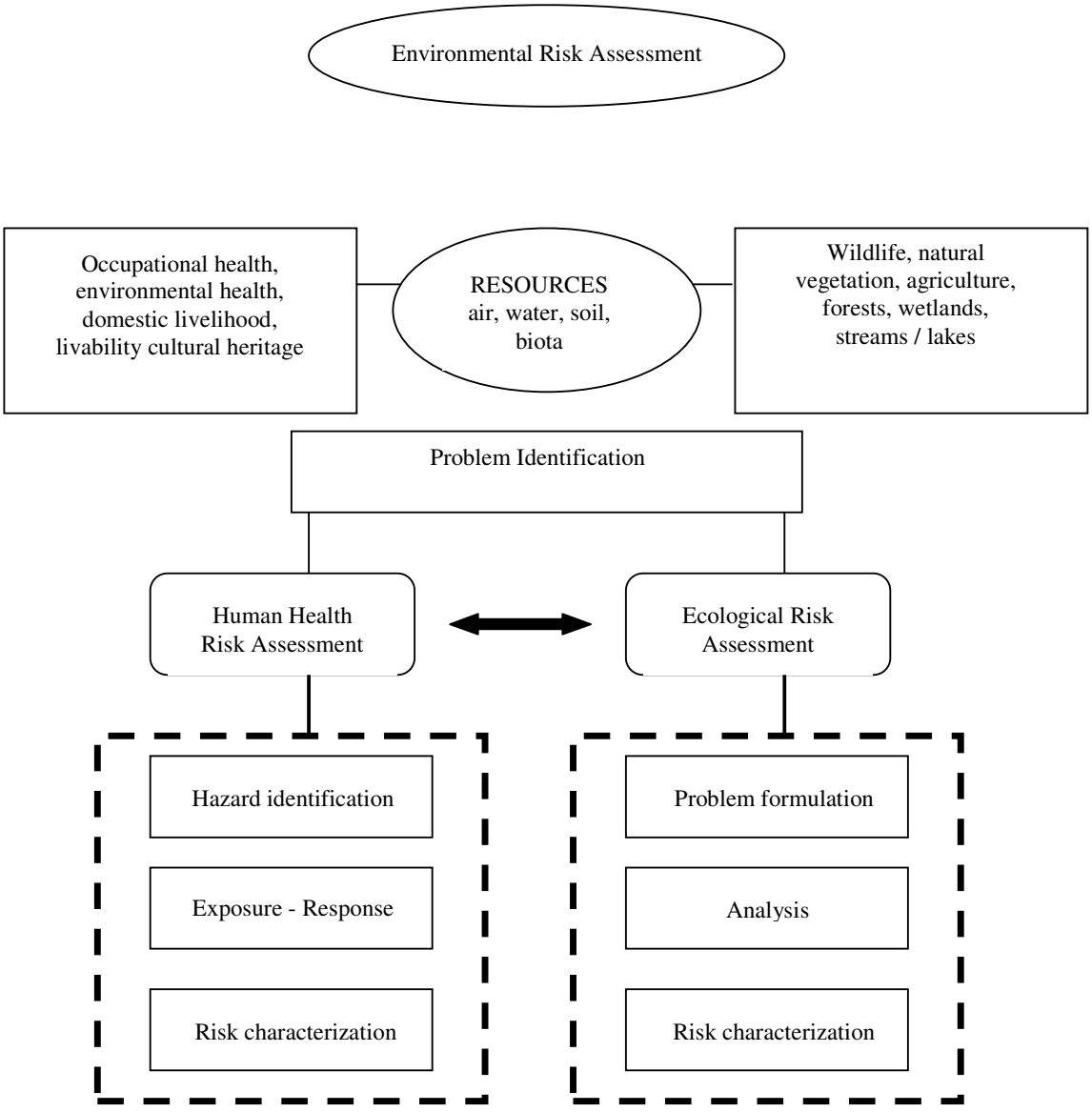


Figure 2.1. Environmental risk assessment (Galatchi, 2005).

One special feature of environmental damage is that the location of the incident and the occurrence of the loss may be remote in terms of both time and space and this feature of environmental damage also affects the assessment process (Busenhart et al., 2006).

2.1.3. Environmental Risk Management

The essence of management is the development and use of efficient, effective work processes to achieve desired, agreed objectives and in general, environmental management is not different from this general picture (Hindle et al., 1996).

Environmental risk management is the process of systematically identifying credible environmental hazards, analyzing the likelihood of occurrence and severity of the potential consequences, and developing a strategy to sufficiently mitigate the risk.

According to risk management theory, the risk management decision-making process consists of five steps (Neuman, 1998, Williams and Heins, 1981):

- identifying and analyzing loss exposures;
- examining alternative risk management techniques;
- selecting the appropriate technique;
- implementing the chosen technique;
- monitoring the results.

Today, environmental risk management that aims to avoid developments, which are not sustainable, is becoming an increasingly important part of corporate strategy of the operators (Anderson, 2002).

2.1.4. Environmental Liability

Environmental liability is a legal obligation caused by the past or by the ongoing manufacture, use, release, or threatened release of a particular substance, or by other activities that adversely affect human health or the environment. It usually results from or based upon:

- violation of any environmental regulation;
- the generation, use, handling, transportation, storage, treatment or disposal of any hazardous materials;
- exposure to any hazardous materials;
- the release or threatened release of any hazardous materials into the environment;

- any contract, agreement or other consensual arrangement pursuant to which liability is assumed or imposed with respect to any of the foregoing.

There are two main environmental liability regimes: fault-based and strict liability. Under the fault-based liability, a person is held liable for environmental damage only if he or she is proven to be at fault. On the other hand, strict liability eases the burden of establishing liability because fault need not be established (Bennett, 1989). However, it still has to be proved that the damage was caused by someone's act.

In this context, there are two main types of liability rules, polluter only liability and extended liability. Under the first one the polluter alone is liable and in case of insolvency the residual damages are externalized to third parties. In contrast, extended liability assigns liability for residual damages to third parties having contractual relationships to the polluter (Feess and Hege, 2000). Extended liability can occur in two different ways; proportional liability and joint and several liability (Boyd and Ingberman, 1996).

2.1.5. Protection of Environment by Different Laws

When personal rights are violated, compensation is governed by civil law. Administrative environmental law, on the other hand, protects environmental commodities and is intended to ensure their sustainable and environmentally compatible use and to prevent risks for the public. Criminal law is considered as the third legal pillar of environmental protection (Munich Re, 2003). There is a need for criminal law instruments for the protection of environment (Güneş and Coşkun, 2004).

The main pillar for environmental protection is administrative environmental law, as this protects the public and the environmental commodities by means of different measures. There is a residual risk for the environment and the public which varies from place to place, and is dependent on three aspects; the relevant enforcement by the authorities, social acceptance, and the environmental performance of the companies in question. But the risk is never zero (Munich Re, 2003).

2.2. Insurance

2.2.1. Definition of Insurance

Insurance can be defined as a financial instrument for reducing risk by combining a sufficient number of exposure units to make their individual losses collectively predictable. The loss is then shared proportionately by all units in the combination (Mehr and Cammack, 1980). Insurance tends to creation of an optimum allocation of resources.

Put another way, insurance is a financial arrangement, which redistributes the costs of unexpected losses among the people facing common risks. These people contribute a fixed amount and in exchange for the payment, they get an assurance that a certain sum of money is to be paid to them on the happening of the event insured against. Insurance involves the transfer of loss exposures to an insurance pool and the redistribution of losses among the members of the pool (Satvinder, 2006). In other words, individual risks are pooled and shared, with each policyholder making a contribution to the common fund.

Insurance covers a very wide field of activity and takes the risk away from people's lives and businesses (Dinsdale and McMurdie, 1982). In return for paying premiums persons know that, if the unexpected happens, financial compensation will be available from the fund of premiums.

2.2.1.1. Premium. In insurance business the contribution is called as the premium. Insurance organize the sharing among a large number of persons of the cost of losses which are likely to happen only to some of them at any one time (Jones, 2003). The loss is in fact paid for by the policyholder making the claim and by all the other policyholders who have not suffered in the same way. Premiums are paid to insurers. Insurers consider the probability of different types of risk happening and they calculate the premiums needed to create a fund large enough to cover likely loss payments.

Basically, there are two important factors to calculate the premium; firstly, the general likelihood that a loss will occur and secondly, whether the particular policyholder is below or above average in risk.

2.2.1.2. Insurance contract. Insurance contract can be defined as a contract between two parties by which one party undertakes to make good or indemnify any financial loss suffered by other party on the happening of a specified event such as fire, accident or death and other party undertakes to pay premium. The party agreeing to pay for the losses is called "the insurer" and the other party who receives this payment is called as "the insured" (Satvinder, 2006). Insurers are professional risk takers.

2.2.2. Categorization of Insurance

Insurance can be categorized in different ways.

2.2.2.1. Social insurance & private insurance. Social insurance includes all insurance required by law for substantial numbers of the general population, administered or closely supervised by the government and supported primarily by earmarked contributions with a benefit structure that usually redistributes income to achieve some social objective not private equity.[1] Social insurance is part of social security system and it deals with personnel insurance not with property or liability insurance. Social insurance programs are compulsory for most people; contribution rates and benefits are prescribed by law; social adequacy is usually stressed and although involvement of private insurers in some examples, generally administered by government. Pension plan, disability benefits, unemployment benefits and sickness insurance are the various forms of social insurance.

Private insurance is the insurance, which is based on a contract and purchased from insurance companies, which compete with one another in the market. However, in some exceptional cases, insurance pools, which are created by insurers, provide this insurance.

2.2.2.2. Life assurance & non-life insurance. In general, there are two main different types of private insurance, which are life assurance and non-life (general) insurance. In many countries, they are regulated in different laws or at least by different provisions.

[1] This definition was developed by the Committee on Social Insurance Terminology of the American Risk and Insurance Association.

Life insurance sometimes referred to as life assurance or just assurance provides for a payment of a sum of money upon the death of the insured or at the end of certain period. In addition, life insurance can be used as a means of investment or saving (Swiss Re, 2006). In fact, the risk in life insurance is death of insured in insurance period or survival of insured in a specified date (Ünan, 1998). Life Insurance is different from non-life insurance in the sense that the subject matter of insurance is life of human being (Satvinder, 2006).

Non-life insurance is a term, which defines all types of insurance other than life insurance. Whereby the insurer, in return for a consideration of premium, undertakes to pay the insured, a sum of money, or its equivalent in kind, upon the occurrence of a specified event that results in a financial loss or liability. Two important types of non-life insurance; are property insurance and liability insurance.

Property insurance is insurance against loss of or damage to material property (Benjamin, 1977). Liability insurance is insurance against the risk that the person insured may incur liabilities to third parties. Liability insurance provides an indemnity in respect of legal liability to pay compensation to others. But of course, injury or damage to others or their property is not enough in itself to make the insured liable even though an involvement arises by way of accident or otherwise. Whenever an occurrence of claims potential arises, the insurer considers the application of the policy to the circumstances, injury or damage of the related case and the legal liability of the insured for the injury or damage (Bennett, 1989).

2.2.2.3. Voluntary insurance & compulsory insurance. Private insurance is normally voluntary, people can decide to buy these insurance products or not. However in some cases the law obliges some persons, companies or organizations to hold a minimum amount of private insurance. This type of insurance is called as compulsory insurance. The most common type of compulsory insurance is motor vehicle insurance. In some countries and fields, there are more detailed regulations on compulsory insurance and in some cases there are obligations such as duty to accept for insurers as well.

2.2.2.4. First party & third party insurance. Another way of categorization of insurance involves the distinction between first party and third-party insurance.

In first party insurance, the contract between the insurer and the insured indemnifies the insured for a loss suffered directly by the insured. For instance in property insurance, the damage to the property is a direct diminution of the assets of the insured and the proceeds are paid to the insured to redress the insured's loss. Liability insurance, on the other hand, is third party insurance because the interests protected by the contract are ultimately those of third parties injured by the insured's conduct. For example, if the insured negligently causes injury to a third party, the third party will possess a claim against the insured. If this claim is reduced to a judgment, the insured will suffer a loss. However the loss of the insured is indirect, in the sense that the third party suffers the direct loss (Batten and Dinsdale, 1960). The liability insurer will reimburse the insured for any liability the insured may have to the third party, but in the event of payment, the insured merely serves as a conduit for transmission of the proceeds from the insurer to the third party. So we can say that liability insurance is actually designed to protect unknown third parties. All types of insurance except liability insurance can be fairly thought of as first party insurance (Jerry, 2002).

2.2.3. Insurable Interest

Insurable interest is a fundamental principle of insurance. For an insurance contract to be valid, the insured must have an insurable interest in the subject matter of insurance. It means that the insured must have an actual pecuniary interest. The insured must be so situated with regard to the thing insured that he would have benefit by its existence and loss from its destruction. For instance, a person has insurable interest in his life or in the life of the spouse but he has no insurable interest in the life of a stranger. The owner of a building has insurance interest and if this building is financed by a credit institution then this institution also has interest in the property but is limited to the extent of its financial commitment only. The insurable interest must exist both at the time of the proposal and at the time of claims but in case of life insurance, insurable interest must exist only when the policy is taken (Satvinder, 2006). The essentials of a valid insurable interest are the following:

- There must be a subject matter to be insured.
- The insured should have monetary relationship with the subject matter.
- The relationship between the insured and the subject matter should be recognized by law i.e. there should not be any illegal relationship between the insured and the subject matter.
- The financial relationship between the insured and the subject matter should be such that the insured is financially benefited by its existence or survival and will suffer economic loss at the destruction or death of the subject matter.

The subject matter is life in life insurance, property and goods in property insurance and so on. Insurable interest is essentially a pecuniary interest, no emotional or sentimental loss, like an expectation or an anxiety, could be the ground of the insurable interest (Satvinder, 2006). The principle of insurable interest demonstrates the difference between insurance and gambling, because insurance can be possible only where there exists an insurable interest (Cockerell, 1976).

2.2.4. General Principles of Insurance

Besides the insurable interest, there are some other principles, which apply to insurance. Main principles are as follows:

- Sharing of risk - Insurance is a device to share the financial losses, which might befall on a person on the happening of a specified event. The event may be death in case of life insurance, fire in fire insurance etc.
- Large number of insured persons - There must be a large number of insured persons to spread the loss immediately, smoothly and cheaply. Large number of persons or property is insured to lower the cost of insurance and the amount of premium.
- Value of risk - The risk is evaluated before insuring to charge the amount of share of an insured, premium. There are several methods of evaluation of risks. If there is expectation of more risk, higher premium may be charged.
- Payment at contingency - The payment is made at a certain contingency insured. If the contingency occurs, payment is made. Since the life insurance contract is a contract of certainty, because the contingency, the death or the expiry of term, will certainly occur, the payment is certain. In other insurance contracts, the

contingency is the fire or the marine perils etc., may or may not occur. So, if the contingency occurs, payment is made.

- Amount of payment - The amount of payment depends upon the value of loss occurred due to the particular insured risk provided insurance is there up to that amount. In life insurance, the purpose is not to make good the financial loss suffered. The insurer promises to pay a fixed sum on the happening of an event. But in property insurance, insurance can provide compensation only for the actual value of property.
- Insurance is not charity - Charity is given without consideration but insurance is not possible without premium.
- Losses must not be deliberate and not inevitable – It is not possible to buy insurance for a risk inevitable. For instance, fire insurance cannot be bought for a house, which was already burning.
- Lastly, there are some risks, which have financial implications so vast that they can be dealt with only by the state. These risks (mainly those arising from war etc.) are normally not insurable.

2.2.5. Moral Hazard

Within a competitive market, insurance companies will work hard to control their compensation payments in order to keep the premiums low and to attract more business. However the relaxation of precautionary measures by the insured leads to more numerous and more severe accidents, which in turn cause the payments of the insurance company to rise. This situation is called as moral hazard, moral hazard makes liability insurance unprofitable and rather unpopular with many insurers (Parsons, 2003) Fortunately for the law of torts, insurance companies doing business in the area of liability insurance have an incentive to contain moral hazard on the part of their clients (Wagner, 2005).

There are several instruments available to an insurance company to counteract the effects of moral hazard. One course of action available to insurance companies is to monitor the behavior of the insured in order to adapt the premium immediately once the insured relaxes his safety measures. If seamless monitoring were possible, the insurance company would always charge a premium, which fully reflected the accident risks run by

its client. The insured, in turn, would take efficient precautions against harm because any deviation from the efficient standard would trigger a rise in the insurance premium greater than the cost savings obtained by economizing on the side of safety measures. In addition, bonus/malus system is another instrument to avoid moral hazard. Another device which has been developed by insurance companies is to limit the insurance cover and to leave parts of the risk of liability lying where it was before conclusion of the contract for insurance, i.e. within the lap of the insured. Pertinent examples are caps on the insurance cover, deductibles and various sorts of exclusions such as the exclusion of damage caused intentionally (Wagner, 2005).

2.2.6. Reinsurance

Reinsurance means that one insurer agrees, for a charge, to reimburse another insurer against all or part of a loss. The company purchasing reinsurance is known as the ceding insurer, or more simply, the reinsured, the company selling reinsurance is known as the assuming insurer, or more simply, the reinsurer.

Reinsurance arises from the need of the ceding insurer to spread the risks (Cockerell, 1976). By spreading risk within the insurance industry, reinsurance is a mechanism that enables the insurance industry to function more efficiently.

Moreover reinsurance allows the ceding company to assume individual risks greater than its size would otherwise allow and to protect the cedant against catastrophic losses.

2.2.6.1. Functions of reinsurance. There are many reasons an insurance company will choose to reinsure as part of its responsibility to manage a portfolio of risks for the benefit of its policyholders and investors.

The function of reinsurance is to reduce volatility, and thus the uncertainty of the insurer's pricing risks, by pooling. This is done to increase the probability of survival of the insurer over a given time. In purchasing reinsurance, insurers seek to improve their financial performance and security. There are few primary functions of reinsurance (The Reinsurance and Other Forms of Risk Transfer Subcommittee, 2005):

- Capacity- Reinsurance provides flexibility for insurers in the size and types of risk and the volume of business they can safely underwrite. It will allow the insurer to enter into new business, expand or withdraw from a class or line of business or geographical area within a short period of time.
- Stability- Properly structured reinsurance agreements will assist insurers by limiting wide fluctuations in underwriting results. As a consequence, the limited risk spread will allow the insurer to reduce the required amount of its own funds, and hence the solvency margin. The aspect of security funds is directly related to the increasing importance of the shareholder value by the return on investment.
- Protection- Associated with stability, reinsurance provides for protection against the potential large accumulations that can result from catastrophic events, such as earthquakes or floods.
- Financial- Reinsurance assists in financing insurance operations as an alternative to increasing an insurer's capitalization. In this context, the insurer may have the asset backing of many large reinsurers.
- Expertise- The qualified staff of reinsurers supplies assistance to insurers in specialized areas where the insurer may have little or no experience.
- Predictability- Reinsurance can help to make an insurer’s results more predictable by absorbing larger losses and reducing the amount of capital needed to provide coverage.
- Surplus relief- Reinsurance can improve an insurance company's balance sheet by reducing the amount of net liability and in this way increasing surplus.

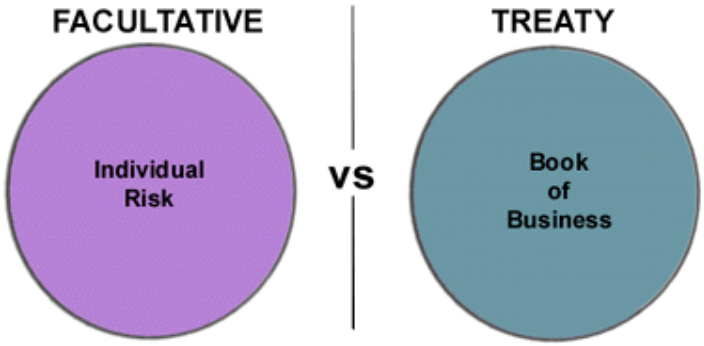
2.2.6.2. Types of reinsurance. There are two main types of reinsurance: Proportional and Non- Proportional.

Proportional. Proportional reinsurance (mostly known as quota share reinsurance) involves one or more reinsurers taking a stated percent share of each policy that an insurer produces. This means that the reinsurer will receive that stated percentage of premiums and will pay that percentage of losses. In addition, the reinsurer can make an upfront payment called the "ceding commission" to the insurer to compensate the insurer for the costs of writing and administering the business such as modeling, agents' commissions, paperwork, etc.

Non-proportional (excess of loss). Non-proportional reinsurance, also known as excess of loss reinsurance, only responds if the loss suffered by the insurer exceeds a certain amount, called the retention. An example of this form of reinsurance is where the insurer is prepared to accept a loss of $1 million for any loss, which may occur and purchases a layer of reinsurance of $9 million in excess of $1 million. If a loss of $8 million occurs the insurer pays the $8 million to the insured, and then recovers $7 million from their reinsurer. In this example, the insurer will retain any loss exceeding $10 million unless they have purchased a further excess layer (second layer) of say $10 million excess of $5 million.

2.2.6.3. Types of reinsurance contracts. There are basically two methods of placing these forms of reinsurance: Facultative and Treaty. Facultative means that the reinsurance arrangement is optional. Each individual risk must be presented individually and is considered on a case-by-case basis. The reinsurer has the right to accept or reject each risk. Each facultative reinsurance forms a complete reinsurance in itself.

On the other hand, a treaty is an agreement whereby the reinsurer agrees to accept the reinsurances on all the risks that fall within the terms of the treaty. The reinsurer will not review individual risks and is obligated to accept the risks that are covered by the treaty.



• Individual risk review • Right to accept or reject each risk on its own merit • A profit is expected by the reinsurer in the short and long term, and depends primarily on the reinsurer's risk selection process • Adapts to short-term ceding philosophy of the insurer • A contract or certificate is written to confirm each transaction • Can reinsure a risk that is otherwise excluded from a treaty • Can protect a treaty from adverse underwriting results	• No individual risk scrutiny by the reinsurer • Obligatory acceptance by the reinsurer of covered business • A long-term relationship in which the reinsurer's profitability is expected, but measured and adjusted over an extended period of time • Less costly than "per risk" reinsurance • One contract encompasses all subject risks

Figure 2.2. Characteristics of facultative and treaty reinsurance (Munich Re America, 2006).

2.3. Environmental Pollution and Insurance

2.3.1. Birth of Environmental Insurance

Environmental risks are a concern of every business, no matter what their industry. In fact, environmental incidents occur less frequently than other business insurance claims but the financial impact of an environmental incident can be severe. Even in some cases its

impacts exceed the value of operator's assets (Pauly, 1997). To meet the demand of operators, some first party and third party insurance products have been developed by insurance industry in time.

The need for a special environmental insurance arose from different needs such as the pollution exclusion in other insurance policies. For instance, general liability policies offer little or no coverage for pollution risks and leave businesses on their own to defend themselves against environmental claims or to pay for expensive environmental damages (Gentile, 2006). Also in some countries there are regulatory provisions relates to this type of insurance and these provisions were obliged companies to buy environmental insurance products before companies realized it could be a useful business tool in completing commercial transactions such as mergers and acquisitions by removing or transferring past liabilities (Corbett, 2003).

Specific environmental insurance products firstly arose in the United States. Because the insurance industry added qualified pollution exclusion to standard general liability policies in 70's as a response to several high profile cases of environmental contamination (Baker, 2003, Munich Re, 2005). The exclusion was as follows: "bodily injury or property damage arising out of the discharge, dispersal, release or escape of smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, liquids or gases, waste materials or other irritants, contaminants or pollutants into or upon land, the atmosphere or any water course or body of water but this exclusion does not apply if such discharge, dispersal, release or escape is sudden and accidental". The purpose of this clause was to restrict coverage to events that were "sudden and accidental" and to protect insurance carriers from long-term or gradual pollution exposure resulting from years of waste dumping or chemical discharges (Insuring Against Environmental Liability).

In 1985, an absolute pollution exclusion clause replaced this clause, the new clause broadened the pollution exclusion and dropped the phase "but this exclusion does not apply if such discharge, dispersal, release or escape is sudden and accidental" (Baker, 2003).

2.3.2. Insurability of Environmental Risks

Insurability of environmental risks is always a problematic issue. In our days some environmental risks can be insured but some others cannot (Pearce, 2000). In general the basic features of an insurable situation are as follows (Richardson, 2002):

- The insurance contract is economically feasible for the parties, in terms of the cost of insurance relative to the potential loss.
- The prospective insurer is able to accurately calculate the probability of the loss and the possible magnitude of the damage should the accident occur.
- The insurer is able to determine the circumstances of the loss so as to decide if the loss was within the terms of the insurance contract.
- There is a sufficiently large number of insurers sharing a similar risk exposure profile, so that the insurer can use past experience to predict accurately the risk faced by any individual.
- Only a small proportion of this group should be exposed to the risk of a loss at any one occasion so that the insurer is not prone to numerous hefty claims simultaneously.

In this regard, there are four fundamental issues that make environmental liability a difficult risk for the insurers (Cuddihy, 2000):

- There probability of loss is not susceptible to precise actuarial calculations.
- The risk is usually too large.
- The number of Environmental liability policies purchased does not allow for adequate spread of risk.
- There are issues with moral hazard and adverse selection.

It is a fact that there is a risk of moral hazard and adverse selection for the companies having insured themselves against environmental damage. This kind of moral hazard has been met by insurance business in the form of contracts, which stipulate measures, and precautions which they expect the operator to take (Matten, 1996). In this context, the growth of corporate subscription to environmental management systems such as that prescribed by the International Organization for Standardization (ISO 14001 standard etc.) or Eco-Management and Audit Scheme (EMAS) of the EU may provide a convenient means of

extending risk differentiation to control adverse selection (Richardson, 2002, Kleindorfer, 1997).

Pollution prevention by insureds also may be encouraged through the environmental appraisal of their activities and the differentiation of insurance coverage and premiums to reflect insureds' level of care. Moreover, imposition of deductibles can be an effective tool as it exposes the insured to some potential losses and exclusions can also promote responsible behavior by precluding coverage for certain types of losses (Richardson, 2002).

Today, it can be seen that the insurance industry is in the position and willing to perform its role within the transfer of risks from the operator to the insurance carrier. However in respect of the highly sensitive area of environmental liability and insurance such role can only be performed in an adequate manner and to the benefit of all parties in the long run, if the insurer can operate within a stable legal framework and within liberal boundaries set and kept by the legislator (Spühler, 1996). In addition, as mentioned above, while the insurers respond to the challenge to insure environmental risks needs to reinsurance support. By supporting several insurers, reinsurers are able to achieve diversification, which is necessary for stable premium levels. This pooling of policies allows to reinsurers to achieve a large enough premium/reserve base on geographical spread of risks (Cuddihy, 2000).

2.3.3. Categorization of Environmental Insurance Products

Today, to meet different needs there are different insurance products in this area. From an insurance point of view, a correct approach to the pollution risk entails the need for a few technical distinctions (OECD, 2003):

- first party (property) v. third party (liability) coverage;
- known v. unknown pollution;
- on site v. off site contamination;
- gradual v. sudden Pollution.

Insurers are moving away from using traditional policies and conventional tools for assessing environmental exposures because they may provide inadequate cover. In time, insurance sector has developed several types of new products aimed at meeting different needs, taking into account that often businesses must assume the costs of cleaning up their own polluted sites, as well as others that may have been contaminated by their activities (OECD, 2003). It is generally accepted that these developments in insurance field also make positive contribution to eco-efficiency (Zweifel, 1996). The following part briefly explains these products.

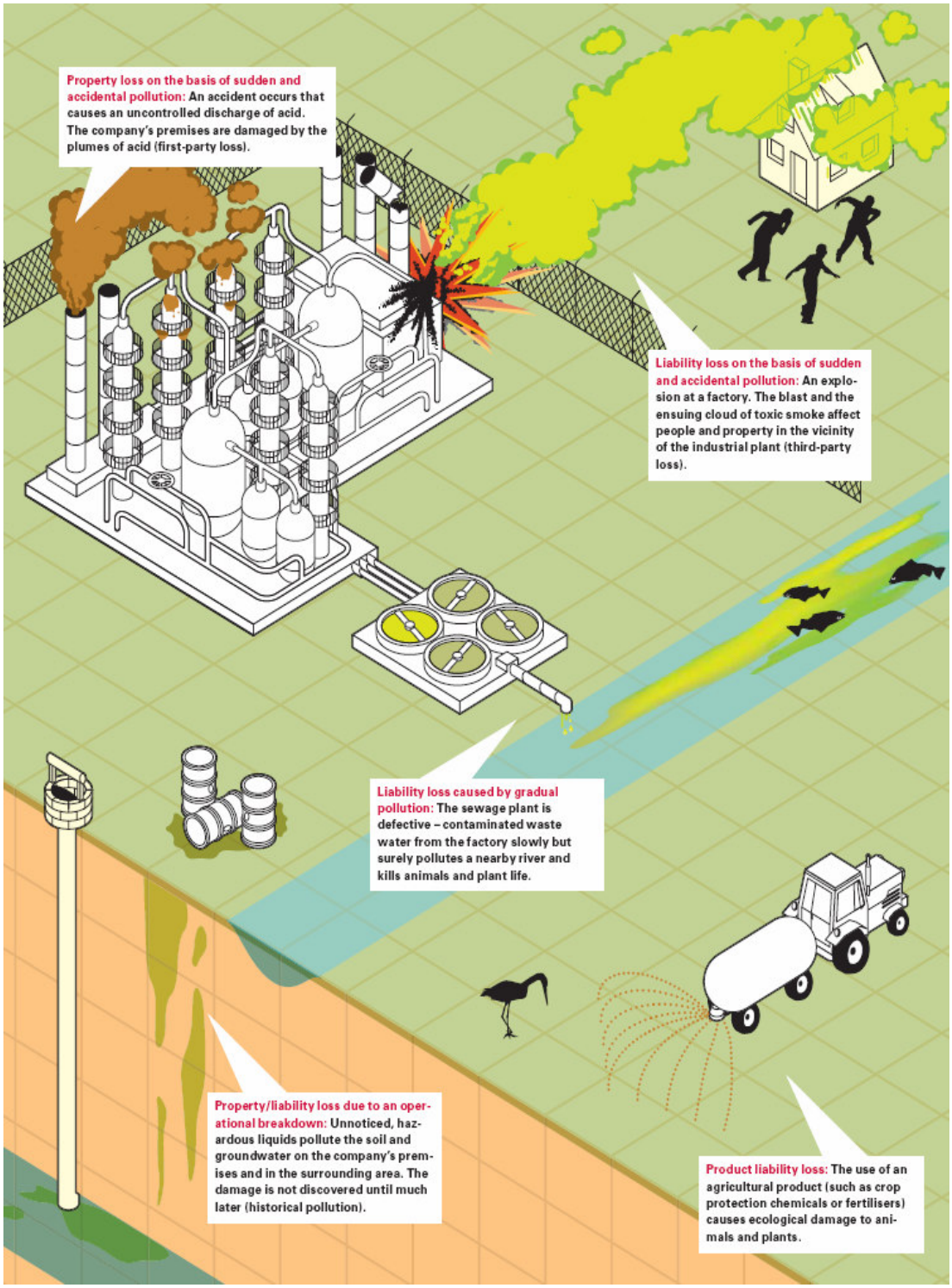


Figure 2.3. The many faces of environmental damage (Munich Re, 2006).

2.3.4. Principle Environmental Insurance Products

2.3.4.1. Environmental impairment liability insurance (EIL). Also known as Pollution and Remediation Legal Liability (PARLL), Pollution Liability, Pollution Legal Liability (PLL) and Environment Liability Insurance. This product provides cover for damages and compensation awarded against the insured in respect of environmental impairment for which they may be held responsible (Risk Management Consultants Ltd, 1979) Environmental Impairment Liability Insurance largely covers third party claims for on site and off site property damage or bodily injury, on or off site clean up costs and legal defense and the investigation expenses in limits. The policy can provide coverage for losses resulting from unknown pre-existing conditions or new conditions. Moreover especially in the U.S. it is possible to find coverage for sudden and gradual pollution conditions. In some cases, the coverage can be tailored to cover known releases so long as no additional significant claims or clean-up costs are expected (Bell and Pearlson, 2003).

A basic difference between the EIL and CGL policies, lay in trigger of coverage, that is, in what determined that a particular policy would be invoked. The CGL policy had a single trigger. It was the occurrence of bodily injury or property damage during the policy period (occurrence basis). The EIL policy contains a "double trigger": a claim made upon the insured and reported to the insurance company during the policy period (claims made). This double trigger ensured that coverage for environmental risk would have no tail beyond the determined period of coverage except for that provided under the limited "optional extended reporting period" endorsement. And, if the policy was renewed, the double trigger made stacking, or coverage under more than one successive policy for the same claim, virtually impossible (Neuman, 1998). However, today some insurers rarely underwrite occurrence basis EIL policies as well (Richardson, 2002).

EIL can be divided into operational pollution coverage and historic contamination coverage. Under operational pollution coverage specialist policies are offered to indemnify companies against ongoing risks resulting from unanticipated discharges, spillages etc and fill any deficiencies in general liability cover. The "pollution condition" is generally identical to the CGL policy's pollution exclusion, “a release, discharge or escape of pollutants into the land, water or atmosphere” (Neuman, 1998). Historical contamination

coverage involves insurance for liabilities associated with pre-existing unknown historic contamination such as an old buried tank discovered during construction. These two forms of cover can also be combined to form a single policy.

In general, this insurance does not cover non-pecuniary relief, business interruption or consequential damages. However today various endorsements are available to this policy and operators may find coverage for business interruption, transportation risks etc. Even it is possible to find an endorsement for some natural resource damages in the U.S. (Balmer and Secchia, 2004).

2.3.4.2. Warranty and indemnity environmental insurance. This kind of insurance is also known as Property Transfer Pollution Liability Insurance (PTP). This type of policy is often used in real estate transactions and typically insures an indemnifying party against any contractual liability derived from providing warranties or indemnities. This is a form of risk transfer, which provides the acceptance of the contractual liability of the indemnity or warranty by the warranty and indemnity provider. The cover is limited to liability resulting from the relevant contract.

2.3.4.3. Contractor's pollution liability insurance (CPL). This is a specialist form of EIL insurance designed to protect construction contractors working on potentially or historically contaminated sites and known as "Contract Liability Insurance" as well. The policy provides pollution liability coverage for any type of contracting operations. This would include third party bodily injury and property damage, clean up costs and defense expenses, which arise from, covered operations performed by or on behalf of the contractor or name insured (Slivka, 2006). The policy can cover sudden or gradual pollution.

Additionally, the policy may cover vicarious liability for pollution conditions arising from subcontracted operations (Survival with Environmental Insurance).

New sites for suburban development are known as "greenfields." As these are becoming scarce and many real estate developers are branching into the development of "brownfields." In general, brownfields can be defines as "real property, the expansion, redevelopment or reuse of which may be complicated by the presence or potential presence

of a hazardous substance, pollutant or contaminant" (CERCLA Article 39), but this general definition also has some exceptions. There are pronounced and specific dangers in dealing with brownfield sites as detailed in the national brownfield legislation in the US and the Contaminated Property Regime in the UK (Corbett, 2003). It is therefore essential for companies to protect their operations through the use of this policy.

Previously, early brownfield developers faced unlimited liability for contamination cleanup, remediation required for the intended use and difficulty in obtaining financing for remediation projects. Insurance companies realized this was an untapped facet of the industry and began to provide coverage for such operations. Today especially in the U.S. insurance plays a significant role in reducing or eliminating the uncertainty that exists for all parties involved in a brownfield site (Defining A Brownfields Site: Challenges and Opportunities). The real estate industry uses this policy as a fundamental risk transfer tool for coverage of any environmental exposures excluded from a general liability policy, particularly in the redevelopment of brownfields. Before such coverage was available many companies were reluctant to engage in any activities with unknown environmental or pollution risks (Environmental Liability Insurance, 2004).

2.3.4.4. The lead-based paint and asbestos abatement liability policies. This type of policy protects the insured against claims for bodily injury or property damage by third parties arising, respectively, from asbestos or lead based paint incidents at scheduled projects. Both policies could be written on an occurrence as well as claims made and reported basis (Neuman, 1998).

In some countries such as U.K., asbestos presents a considerable environmental safety concern and subsequently presents problems for the environmental insurance market. It was widely used as a building material in the 1950s through to the 1980s and although much of it has been removed it is still exist. Families as well as the workers themselves were exposed due to living nearby workplaces containing the dust. The use of older buildings such as schools and offices has increased exposure further and a wider demographic spread. Again this would be of concern to real estate developers seeking to comply with such legislation as the Contaminated Property Regime in the UK (Environmental Liability Insurance, 2004). Some policies provided coverage for incidents

during transportation of the material, others did not. Bodily injury to employees, sub-contractors or relatives was usually strictly excluded (Neuman, 1998).

2.3.4.5. Remediation cost cap insurance. This insurance covers the risk that the clean up of a known pollution condition will be more expensive than anticipated (Bell and Pearlson, 2003, Slivka, 2006). It is also known as stop loss, clean-up cost cap or remediation cost overrun policy.

Addresses known contamination for which remediation is required. This policy is underwritten based on an approved remediation plan and a cost estimate developed from a scope of work. Generally, the premiums for these policies can run from 5% - 10% of the expected remediation costs with a deductible of the estimated cleanup costs plus an additional 10%-20% self-insured retention (SIR). For example, a $1 million policy may have a SIR of $100,000; coverage would not begin until $1.1 million has been incurred by the insured (Seguljic, 2006).

The insurer will require that all known environmental data be disclosed, including any estimated remedial cost, and will evaluate and determine its own estimated remedial cost. The policy will then cover costs above this estimated amount, plus a site-specific deducible, up to the policy's limits. These policies are designed to cover catastrophic overruns and therefore, as mentioned above, may involve significant deductions. For this coverage the premium is paid as a lump sum (Manko, Gold & Katcher, 2001).

2.3.4.6. Pollution business interruption insurance. Business interruption losses caused by environmental events such as lost rents due to a release from a cooling system in a shopping mall are ordinarily excluded from standard business interruption policies. The risk generally must be picked up in an environmental policy, typically as an add-on to a pollution legal liability policy. Construction soft costs incurred as a result of pollution conditions such as extra interest on construction financing that accrues as a result of a construction delay due to pollution can also be added to this coverage (Bell and Pearlson, 2003).

2.3.4.7. Lender's insurance. This type of policy is designed to benefit lenders who rely upon real estate as collateral for their loans (Manko, Gold & Katcher, 2001). The coverage generally has two components. The first is that if, during the policy period, the lender gets sued for pollution conditions at its collateral, whether before or after foreclosure, the insurer will defend and indemnify the lender against the claim. The second, coverage will pay off the outstanding loan balance if, during the policy period, (1) there are pollution conditions at the collateral property; and (2) the borrower defaults. This avoids any need for the lender to foreclose on contaminated property in order to collect on its loan. Policies with this coverage are often referred to as "loan balance" policies (Bell and Pearlson, 2003). In some instances, the Policy can be structured to pay the lender either the loan balance or the cost of clean up, whichever is less. (Bell and Pearlson, 2003, Slivka, 2006).

In addition, the policy can also provide protection to the lender for any third party liability associated with the environmental condition including cleanup, bodily injury and property damage, and coverage for defense costs. Such policies are being looked to by more and more lenders as a condition to a loan secured by a contaminated property regardless of whether an environmental investigation has been completed and notwithstanding the secured lender "safe harbor" liability protection afforded under federal and many state cleanup laws. Policies are effective for the term of the loan. The premium is paid as a lump sum and the premium amount dependent on site-specific factors similar to the Pollution and Legal Liability Policy (Manko, Gold & Katcher, 2001). Although these policies are designed to protect lenders, they are also important for borrowers because these policies make lenders more willing to provide capital (Yount, 1999).

2.3.4.8. Pollution cleanup/environmental remediation insurance. The Pollution Cleanup policy provides coverage for first-party cleanup costs arising from pollution conditions on or at covered locations. Cleanup costs, also referred to as remediation expense, are costs incurred for the investigation, removal or treatment of pollution conditions to the extent required by environmental regulations.

2.3.4.9. Environmental professional errors and omissions liability insurance. This policy responds to acts, errors and omissions resulting from covered professional services performed by the insured and includes full pollution coverage. Many of the professional

environmental service vendors can purchase these policies, including environmental engineers, testing labs and environmental consultants (Dybdahl, 2004). In this context, Consultant's Environmental Liability (CEL) is one of the most known professional liability policies (Survival with Environmental Insurance).

2.3.4.10. Transportation coverage. This type of policy covers the risks associated with accidents that may occur during the transportation of hazardous substances (OECD, 2003).

2.3.5. The Protection and Indemnity Clubs (P & I Clubs)

The Protection and Indemnity Clubs (P & I Clubs) are important organizations to cover environmental pollution risks for shipowners. Actually, they are mutual non-profit associations of shipowners, which insure their members' different liabilities such as cargo, passengers, damage to other vessels or to the environment (Gyselen, 1996). They hold around 95% of the relevant market (Seward, 2002). The P & I Clubs operate a Pooling Agreement and according to this agreement, each club bears claims up to a certain amount. The remaining part of any claim up to a second ceiling is shared by all clubs together. In this type of claims-sharing arrangement each participating club sets the terms of direct insurance independently. For claims exceeding the ceiling but remaining under a third ceiling, all P & I Clubs get together to purchase jointly re-insurance on the commercial market. The excess of any claim over the third ceiling (the so-called overspill) is again shared by all P & I Clubs (Gyselen, 1996).

3. ENVIRONMENTAL INSURANCE: THE UNITED STATES, THE EU MEMBER STATES AND TURKEY

3.1. The United States

3.1.1. Environmental Regulations and Insurance in the U.S.

The primary driver of the environmental insurance products, in the United States has been the creation and enforcement of environmental regulations that incorporate the polluter pays principal. Federal and state governments have instituted rigorous environmental liability regulations in response to public demand. Consequently, many industries have become subject to increased environmental liability and financial loss exposures. These industries realized that they must protect themselves with environmental insurance products. Today there are many federal laws aiming prevent and improve the quality of environment in the U.S., such as; Clean Water Act, Clean Air Act, CERCLA, Oil Pollution Act (OPA) and RCRA (Anderson, 2002).

The liability obligations of polluters in the U.S. have been established by the CERCLA (also known as the Superfund law), passed in 1980, and the Resource Conservation and Recovery Act (RCRA), passed in 1976. On the other hand, compensation for "natural resource damage" is addressed in two US federal statutes: CERCLA, concerned with compensation for damage caused by hazardous waste and the Oil Pollution Act (WWF and BirdLife, 2000).

In 80's, the insurance industry specifically began to exclude the coverage of environmental pollution and remediation from its model general liability policy, and started insuring pollution and other environmental risks through separate environmental insurance policies (Busenhart and Baumann, 2003). However, the passage of the Sarbanes-Oxley Act in 2002 has contributed to the development of the environmental insurance market by encouraging operators to better assess and publicly disclose the full range of their liabilities, including environmental liabilities. In particular, under the provisions of Sarbanes-Oxley, failure to publicly disclose environmental liabilities as well as others may

lead to personal liability on the part of a company's officers and directors, exposing them to lawsuits brought by shareholders. Moreover, most directors and officers liability insurance excludes coverage of environment related claims. This new emphasis on full reporting of corporate environmental liabilities has in many cases encouraged corporations to deal with such liabilities by transferring much of their risk to insurers, through policies aimed specifically at environmental liability (The U.S. International Trade Commission, 2004).

In the U.S., historically, one of the largest sources of environmental insurance claims has been asbestos. During 1993-2002, the insurance industry paid out $1.7 billion per year, on average, in asbestos-related claims. While asbestos remains an ongoing issue, other environmental concerns are also rising in importance. Chief among these is toxic mold, which shows signs of becoming the "new asbestos" in terms of cost to the industry and increasing significance. The increase of toxic mold problems in the United States has led to expensive remediation and expensive lawsuits. Mold claims usually have been excluded from general liability policies, and there is an emerging consensus that toxic mold fits the definition of an environmental pollutant under standard environmental liability policies (The U.S. International Trade Commission, 2004).

3.1.1.1. Resource conservation and recovery act (RCRA). Originally enacted in 1976 and amended in 1984, the Resource Conservation and Recovery Act (RCRA) provides regulation of hazardous waste, imposing strict waste management requirements and in some cases cleanup on generators and transporters of hazardous wastes and on hazardous waste treatment, storage and disposal facilities. It also regulates underground storage tanks, non-hazardous solid wastes and medical wastes though the requirements for some of these categories are considerably less stringent than for hazardous wastes (Hartwig and Wilkinson, 2005).

A wide variety of wastes are included within the scope of the RCRA's regulatory program. Notable exceptions are waste oil and certain high volume, low toxicity wastes such as various mine wastes (Hartwig and Wilkinson, 2005). The concept of financial responsibility is applied under RCRA and owners of above mentioned facilities are required to demonstrate financial ability to pay for third party claims and cleanup costs

associated with a release of contaminants, as a precondition to get approval (Feess and Hege, 2000, Hartwig and Wilkinson, 2005).

Under RCRA, there are different options for operators to demonstrate financial responsibility, namely corporate and local government financial tests, trust funs, letters of credit and insurance (Feess and Hege, 2000). Actually similar provisions exist in OPA as well. OPA requires financial responsibility for tankers, oil terminals, gas terminals and offshore pipelines (Feess and Hege, 2000).

3.1.1.2. Comprehensive environmental response compensation and liability act (CERCLA). The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, was enacted by Congress in 1980. Basically CERCLA (EPA Brownfields Cleanup and Redevelopment, 2006):

- established prohibitions and requirements concerning closed and abandoned hazardous waste sites;
- provided for liability of persons responsible for releases of hazardous waste at these sites and
- established a trust fund (superfund) to provide for cleanup when no responsible party could be identified.

Under CERCLA Polluter pays principle applies and the government has several options to get responsible parties to clean up a site. It can (Winalski, 1994):

- finance the cleanup itself and then sue the property owner for reimbursement;
- issue an administrative order requiring the property owner to perform cleanup activities; or
- invite the property owner to enter into a negotiated agreement providing for cleanup costs.

The law authorizes two types of response actions; short-term removals, where actions may be taken to address releases or threatened releases requiring prompt response and long-term remedial response actions, that permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious, but not immediately life threatening. These actions can be conducted only at sites listed on

EPA's National Priorities List (NPL) (EPA Brownfields Cleanup and Redevelopment, 2006).

The liability regime of CERCLA is strict, retroactive, joint and several, meaning that any party may be held fully liable at any time for releases that occurred prior to the enactment of Superfund (Yount, 1999). In this context, managers, shareholders, holding companies, secured creditors are among the groups, which have been held liable under the CERCLA (Feess and Hege, 2000).

There are only three defenses to CERCLA, which are acts of god; acts of war; and acts of an unrelated third party (Hartwig and Wilkinson, 2005).

3.1.2. The U.S. Environmental Insurance Market

Industry estimates placed the size of the U.S. market for environmental insurance in the range of $1.7 billion to $2.0 billion in premiums in 2003. But the estimated cost for the environmental clean up effort at all contaminated sites in the United States range between $700 billion to $1 trillion. (Hartwig and Wilkinson, 2005).

Eight large firms active in the market and one of these companies namely AIG reportedly underwriting more than half of the market (The U.S. International Trade Commission, 2004). Premium volume has been increasing at an annual rate of 20-25 percent in recent years, and observers expect that rate of growth to continue, as corporations and the real estate market develop a greater understanding of the deal-facilitation benefits of environmental insurance. However, according to some observers, the market for PLL (EIL) insurance may have matured along with the overall market for remediation services, as many of the highly polluted Superfund sites have been cleaned up, and improved environmental practices, including the use of environmental management programs such as ISO 14000, have reduced the number of new industrial sites in need of remediation and in the future, this trend may lead the U.S. environmental insurers to pursue opportunities in foreign markets (The U.S. International Trade Commission, 2004).

3.1.3. Common Types of Environmental Insurance in the U.S. Market

Environmental insurance is available in several principal categories. In this context, environmental liability insurance (pollution legal liability insurance), cleanup cost cap/stop loss insurance, contractors' and consultants' environmental liability insurance and lenders' insurance are leadings categories.

Types of environmental insurance available in the U.S. market

Type of insurance	Explanation
Pollution legal liability (PLL) insurance	The largest share of environmental insurance premiums. Protects the property owner from unexpected environmental cleanup costs, for a specified policy term, up to a specified monetary value. Designed to fill the gap created by the absolute pollution exclusion inserted in general liability insurance forms as of 1986.
Cost cap/stop loss insurance	Insures against cost overruns on a known environmental cleanup site. Claims are paid when remediation costs exceed an agreed upon target amount, which is generally set at 10 percent above the expected cleanup costs
Contractors/consultants liability insurance	Insures contractors and environmental consultants against further environmental damage caused by the contractor during a remediation project. Insurance may be project-specific, or cover a contracting firm and its employees for all projects undertaken during a specific time period.
Secured creditor insurance/Lenders environmental protection insurance	Protects lenders against a borrower's default on a loan due to unexpected environmental problems at a property site. In most cases, this type of policy pays claims directly to the lender, equal to the lesser of the cleanup costs or the balance of the loan.

Figure 3.1. Types of environmental insurance available in the U.S. market (The U.S. International Trade Commission, 2004).

On the other hand, the U.S. is the leading country in environmental insurance field and as mentioned in related part of the thesis, there are many other environmental insurance products and coverages available in the U.S.

3.2. The EU Member States

3.2.1. Environmental Insurance in Europe

The insurance industry already provides first party and third party coverage for environmental risks throughout Europe. However, European market for environmental insurance products is not well developed.

Today, there is a growing concern and interest for the environment and environmental insurance in Europe. In the following survey of the AON (dated 2005), European insurers were asked to identify the three emerging risks, which are of most concern to the future of their business, and environment was one of the issues that they identified.

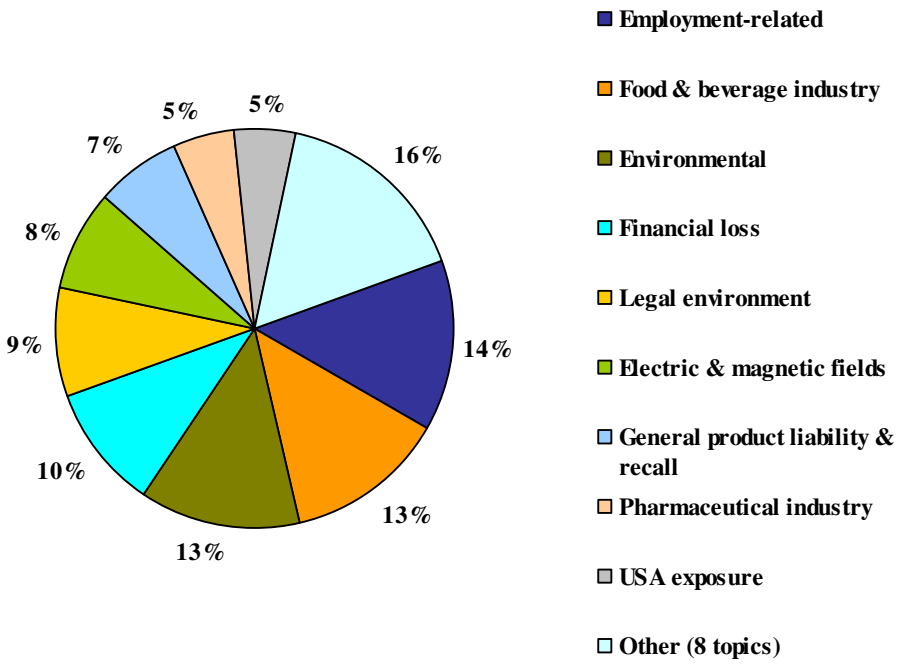


Figure 3.2. European insurers opinions on emerging risks (AON, 2005).

In the same survey, insurers have been asked: "Following the introduction of the European Union directive on environmental liability (2004/35), will you be broadening your suite of pollution products to include gradual pollution and post-incident covers for European multinational clients".

The answers were as follows:

- 25% of respondents noted that they already offered these.
- 3% answered affirmatively.
- 40% will be considering.
- 32% answered negatively or did not know.

3.2.2. Compulsory Environmental Insurance in Europe

3.2.2.1. Sweden. The Swedish Environmental Code was adopted in 1998 and entered into force in 1999. The rules contained within 15 acts have been merged in the Code. As many similar rules in previous statutes have been replaced with common rules, the number of provisions has been reduced. The Environmental Code is nonetheless a major piece of legislation. The Code contains 33 chapters comprising almost 500 sections. However, it is only the fundamental environmental rules that are included in the Environmental Code. More detailed provisions are laid down in ordinances made by the Government (The Government Offices of Sweden, 2006).

To protect the public and restore the environment in cases when the polluter is unknown, insolvent or not liable, there is a compulsory insurance system, which is operated by insurance companies and financed by levies on about 10,000 operators of potentially environmentally hazardous facilities (Salmon et al., 2005). According to the Code, anybody, whether a corporation or private individual pursuing environmentally hazardous activities for which a permit must be obtained or a notification filed to the relevant authorities, have to pay a pre-determined fee in order to finance common environmental damage insurance (*Sw. miljöskadeförsäkring*) and common environmental clean up insurance (*Sw. saneringsförsäkring*) (Sjöberg and Malmborg, 2006).

The contributions shall be paid for one calendar year in advance. The Government may issue rules concerning exemptions.

According to the Chapter 33, Section 2 of the Code, compensation shall be paid out of the environmental damage insurance, to claimants for bodily injury and material damage in following cases:

- If the claimant is entitled to compensation but cannot obtain payment or the right to demand compensation has lapsed.
- If it cannot be established who is liable for the injury or damage.

On the other hand, According to the Chapter 33, Section 3 of the Code, compensation shall be paid out of the environmental clean-up insurance in accordance with the relevant terms and conditions for any costs for clean-up that are incurred in consequence of an authority's request for enforcement and where the person who is liable pursuant to the Code is not able to pay.

The Code also gives a responsibility to insurers. If environmental damage insurance or environmental clean-up insurance contributions are not paid within thirty days of the date of demand, the insurer shall report the nonpayment to the supervisory authority. The supervisory authority may order a person who is liable for payment to comply with his obligation subject to a penalty of a fine.

3.2.2.2. Finland. The Environmental Damage Insurance Act (81/1998) came into force on January 1, 1999 in Finland. This act guarantees full compensation for environmental damage in cases where those liable for compensation are insolvent, or the liable party cannot be identified. Thus, the act creates a complementary compensation scheme for environmental damage occurring in Finland. The Act guarantees full compensation not only to those suffering from environmental damage, but it also covers the costs of measures taken to prevent or limit the damage and to restore the environment to its previous state (Ministry of the Environment, Finland, 2006). The act is not retroactive, so it is applicable only to damage occurring after its entry into force. The Law states that it does not cover compensation for oil spills, because there is a specific Oil Pollution Compensation Fund from which compensation for oil spills is paid (Section 1 of the Act).

The scheme is financed by special insurance, which is compulsory for the companies whose activities cause risk to the environment. All parties holding an environmental permit are obliged to take out insurance. Section 2 of the Act is as follows:

"Any private corporation whose operations involve a material risk of environmental damage or whose operations cause harm to the environment in general shall be covered by insurance against loss compensable under this Act (environmental damage insurance). Further provisions on the obligation to insure will be issued by decree."

The system is run by the insurance companies and according to the Section 5 of the Act there is a duty to accept for insurers. The Section is as follows:

"Environmental damage insurance policies can be issued by insurance companies which are authorized to engage in insurance business falling under non-life insurance class 13 in Finland under the Insurance Contracts Act (1062/1979) or the Act on Operations of Foreign Insurance Companies in Finland (398/1995).

No insurer engaging in insurance operations covered by this Act may refuse to issue environmental damage insurance."

After the entry into force of this Act, insurers have established the Environmental Insurance Centre, which handles all the claims for compensation under this scheme (Ministry of the Environment, Finland, 2006).

Today, there are also other environmental liability insurance products in Finland. The conditions of these products are usually tailor-made. However, premiums are quite high and accordingly demand of operators is very low (Alanko and Lindell, 2006).

3.2.2.3. Germany. In Germany environmental insurance coverage or other financial guarantees are mandatory for certain high-risk activities. German Environmental Liability Act (*Umwelthaftungsgesetz* of 10 December 1990) regulates the issue.

Article 19 of the Act demands a guarantee from some facilities. They have to ensure that they are able to fulfill their legal obligation to provide compensation for damages that arise from a person suffering death or injury to his body or health, or from property being damaged, as a result of an environmental impact that issues from the facility (provision of coverage). If a facility that is no longer in operation presents a special hazard, the competent administrative agency may order the person who operated the facility at the time of the ceasing of operations to provide for coverage for a period of up to ten years. This coverage may be provided:

- in the form of liability insurance issued by an insurance company licensed to do business in the territory in which this Act applies;
- in the form of an indemnity agreement or guarantee made by the Federal Government or by a state; or
- in the form of an indemnity agreement or guarantee made by a credit institution licensed to do business in the territory in which this Act applies if such agreement or guarantee provides security comparable to that provided by liability insurance.

The competent administrative agency may prohibit, in whole or in part, the operation of a facility if the operator does not comply with his duty to provide for coverage and fails to prove, within a reasonable time to be set by the competent agency, that coverage has been provided for.

The Act also limits the liability of operators. Article 15 of the Act imposes strict liability limited to €85 million for death, bodily injury or injury to health (personal damages) and a same amount for property damages.

In fact, traditionally, environmental insurance has not played a major role in Germany and environmental liability insurance mainly plays a role under above-mentioned Environmental Liability Act (Spieth and Ramb, 2006).

In this context, a model Environmental Liability Insurance (*Umwelthaftpflichtversicherungs-Modell or UHV-Modell*) is developed in Germany. It covers prevention losses, bodily injury, property damage and in some cases financial loss due to liability claims under civil law. This insurance does not cover the claims brought by

way of public law or by the authorities and claims arising from ecological damage (Busenhart and Baumann, 2003). The cover provided with this insurance is limited to those risks, which are expressly, and clearly described in the policy and usually environmental damages caused by the normal operation of an installation is excluded from the cover. However, the operator of an installation is still liable for such damage under the terms of the Environmental Liability Act. Only one exception to this rule exist and this exception applies if the insured party proves that he could not reasonably have been expected to recognize the possibility of such damage, judging by the state of technology at the time of the effect on the environment (Spieth and Ramb, 2006).

3.2.3. Voluntary Environmental Insurance and Reinsurance Pools in Europe

3.2.3.1. France. In France, there is no compulsory environmental insurance (Luscan, 2004). Since 1994, classic third party liability insurance excludes damage caused to the environment itself but specific insurance policies covering liabilities arising from both accidental and gradual pollution are available (Jacques and Huglo, 2006).

In France, *ASSURPOL* was formed in October 1988 and began to operate from January 1, 1989 for the purpose of administering the co-reinsurance and retrocession for common account of the risks of damage to the environment. It takes the form of an inter-company partnership, bringing together 39 insurance companies and 8 reinsurance companies (as of 15.10.2006). The creation of such an inter-company partnership is provided a reinsurance possibility for the member companies that traditional reinsurers would not provide. *ASSURPOL* replaces *GARPOL*, a co-reinsurance pool set up in 1977 by more or less the same companies with a total capacity of only one quarter that of *ASSURPOL.* The pool offers coverage for environmental impairment claims for bodily injury or property damage and certain kinds of financial loss and usually does not make a distinction between gradual and accidental pollution (Bocken et al., 2005). The policies are reinsured by *ASSURPOL* only cover pollutions, which are fortuitous and unforeseeable and does not cover historical pollutions. Moreover it does not cover damage to the environment it self (i.e. damage to water, fauna or flora) (Jacques and Huglo, 2006).

ASSURPOL also carries out and coordinates all studies or surveys and the gathering of statistics aimed at developing and improving the standards of insurance of such risks, helps examine co-reinsured risks, keeps account in respect of those risks, and holds and administers the sums representing the co-reinsurance liabilities towards all the ceding companies. *ASSURPOL* is exclusively a reinsurer. Insurance companies alone are authorized to offer cover with the freedom of giving them a different scope. The approach taken by members of *ASSURPOL* is motivated by several factors: Improve technical knowledge of the risks, achieve a combined capacity for cover (maximum €60 million for each contract) (Assurpol, 2006), share the financial results both of premiums and losses proportionally according to each member's share (Toxic Waste at Doñana, 2000).

ASSURPOL provides its services for France, the French overseas departments and territories and the Principality of Monaco. Nevertheless, risks situated elsewhere may also qualify for *ASSURPOL* cover, subject to the agreement of the Technical Committee of the group. Membership of the *ASSURPOL* is open to any French or foreign insurance or reinsurance company authorized to operate in France, including, therefore, enterprises which, though not established in France, are authorized to operate there under conditions of freedom to provide services (Commission Decision 92/96/EEC, 1992).

Pursuant to the statutes of the grouping and the co-reinsurance agreement, the decision-making bodies are as follows (Commission Decision 92/96/EEC, 1992):

- the General Meeting;
- the Management Board;
- the Technical Committee;
- the Claims Settlement Committee.

The Management Board is elected by the General Meeting. It is responsible, among other things, for organizing and coordinating the studying of risks and for determining the procedure whereby co-reinsurance operating costs are added to pure premiums. The Technical Committee is appointed by the Management Board and is responsible for defining the characteristics of risks for which a premium rate may be quoted directly by reference to the tariff and those of risks of which the premium has to be assessed on a case by case basis; determining the conditions of application of the common retrocession

agreements and the common acceptance agreements decided by the Management Board; deciding on extensions to the territorial limits within which risks giving rise to a co-reinsurance cession may be situated. The Claims Settlement Committee consists of four members: a chairman (representing the insurer member or participant member members of the Technical Committee), a representative of the insurer member and another of the participant member non-members of the Technical Committee, and a representative of the policy-issuing company concerned by the claim. The composition of the Claims Settlement Committee is renewed whenever a new claims dossier comes up for examination (Commission Decision 92/96/EEC, 1992).

ASSURPOL offers several different types of specific cover. The amount of cover is limited to €60 million per claim and per contract/year (amount of damages in respect of all claims notified to the insurer in the course of the same insurance year and ascribable to the same event). Within these limits, and as a rule subject to a sub-limit of 20%, cover is provided for clean-up costs and business interruption losses. The contract is concluded for one year and is renewable from year to year (Assurpol, 2006).

The main coverages provided by *ASSURPOL* are as follows (Assurpol, 2006):

- Legal Liability for Environmental Aggressions (RCAE-*Responsabilité Civile Atteinte a L'environnement*) for fixed land-based installations having industrial or commercial activities (accidental or gradual pollution, transportation of dangerous substances is not covered).
- Legal Liability for Environmental Aggressions (RCAE) for the installations of local government organizations (accidental or gradual pollution).
- Legal Liability for Environmental Aggressions (RCAE) for Professionals. This coverage is designed for survey offices, consultant engineers whose activities present significant exposure to risks of aggressions to the environment (accidental or gradual pollution).
- Legal Liability for Environmental Aggressions (RCAE) for Building sites - depollution or construction (only accidental pollution).
- Legal Liability for Environmental Aggressions for the costs of depolluting land.

These policies guarantee quantifiable damages, suffered by identified third parties. There are no clear exclusions for economic losses such as loss of yield, loss of revenues, in the RCAE policies. However, ecological damages are explicitly excluded from the coverage.

The policies provided by *ASSURPOL* exclude damages suffered by elements of nature as such, which are subject to the common usage of the local community, as well as the purely moral hardship which would be invoked by any person who felt they had been injured by the degradation of a landscape or the spoilage of a natural biological element. The justification for excluding these damages is that they do not fit into the framework of traditionally recognized bodily injury or damage to property (Toxic Waste at Doñana, 2000).

3.2.3.2. Italy. In Italy, there is no compulsory environmental insurance (Luscan, 2004). However, pollution coverage is provided by an environmental insurance pool, namely R.C. *Inquinamento* and also some other companies. In 2002, total environmental insurance premiums reached €17 million. The market is constantly growing: premiums in 2001 amounted to €16 million and in 1999 to €11 million. However, environmental insurance is still rarely used as a method of allocating environmental risk, and traditional risk allocation tools such as warranties and indemnities are dominant (Clarich and Giordano, 2006).

In Italy, Pool R.C. *inquinamento* is a pool, which consists of 55 insurance and reinsurance companies operating in Italy. The pool operates in the market with the aim of providing adequate insurance coverage for environmental risks. Each member of the pool bears part of the insured risk and therefore enables the underwriting of larger insurance policies and at the same time the increase in and sharing of technical know-how acquired in the environmental insurance market. By pooling insurance companies it has been possible to create an insurance policy standard to cover environmental risks that, given the pool reinsurers' capacity, may cover a maximum exposure of €30 million (Clarich and Giordano, 2006).

The policy which is underwritten by the poll is called as R.C. Inquinamento. This policy provides coverage for civil liability claims arising from damages produced by

accidental and gradual pollution. Considering the types of risks, companies buying this insurance are essentially operating in the field of waste treatment (40.9% of the total premiums amount), chemical production (24.01%), metal mechanics/engineering (9.7%), and oil production (9%) (Clarich and Giordano, 2006).

3.2.3.3. Spain. In Spain, currently there is no compulsory environmental insurance and the environmental insurance market is not very developed to date (Luscan, 2004). But some new draft laws have compulsory financial guarantee provisions.

Moreover, in Spain, the main industrial risk insurance and reinsurance companies have combined their experience in pollution risks within the *Pool Español de Riesgos Medioambientales*, which was established in 1994. Since it began to underwrite, the Pool uses specific tools for risk assessment and special insurance conditions. (Toxic Waste at Doñana, 2000). The Pool also works with the public authorities to find solutions for prevention and clean up operations for the environment.

The members of the Pool have developed two main insurance policies to be used by all of them in order to cover environmental risks (Castellá and Santabaya, 2006):

- civil liability insurance, covering damage caused to third parties or to the environment;
- insurance for land pollution, which covers the polluting company's own premises and the company's obligation to repair them.

Moreover, they have centralized the management and control of such insurance policies (Castellá and Santabaya, 2006).

3.2.3.4. Netherlands. In the Netherlands, general liability policies for businesses exclude all claims arising from environmental risks (Busenhart and Baumann, 2003). The only exception is bodily injury.

Since 1998, insurers in the Netherlands have been offering environmental damage insurance. The environmental damage insurance is the result of a co-operative arrangement within the insurance branch in the Netherlands, the so-called *Milieupool*. The *Milieupool*

has been set up to jointly defray the costs of major environmental damage claims (ING Group, 1999).

The environmental damage insurance covers both damage on the party's own property and damage on the grounds of third parties. This insurance is not liability insurance (Faure and Grimeaud, 2000). Coverage takes place as soon as the insured site is polluted as the result of the insured risk, irrespective of the fact that the insured liable for the damage or not (Faure, 2001). The insurance provided by *Milieupool* covers cleaning up contaminated soil on sites (belonging either to the insured or to third parties) or surface water. Ecological damages are explicitly excluded (Busenhart and Baumann, 2003).

3.3. TURKEY

In Turkey, environmental insurance is quite new subject and in the insurance market a specific environmental insurance product does not exist. However two important pieces of legislation entered into force recently and the current situation can change eventually.

The Law amending the Environmental Law entered into force following the publication in the Official Gazette no: 26167, dated 13.5.2006. Article 13 of this Law is entitled as "Hazardous Chemicals and wastes" and amends the Article 18 of the Environmental Law. The Article envisages a compulsory insurance for the operators who deal with the production, sale, storage, use and transportation of hazardous chemicals and for the operators who deal with the collection, transportation, storage, recycling, re-use and destruction of hazardous wastes. The insurance has to cover the risk of damage, which can be occurred following an accident that will happen during the operation of professional activities. Otherwise, operators will not be allowed to have their operation license.

This compulsory insurance has to be provided from the insurance companies, which are determined by the Undersecretariat of Treasury, according to their financial capacity or a pool which is established by these companies. The pool may be established in the form of insurance or reinsurance pool and its activities are regulated by a regulation, which will be published by the Undersecretariat of Treasury. According to the Article, at the beginning, a loan can be provided by the Undersecretariat of Treasury's budget for the establishment

expenses of the pool. The financial support of the State will be decided by the Minister to which the Undersecretariat of Treasury is subordinate. Indemnity of the pool is limited with the premium income, its interest, provided reinsurance and the solvency of the pool.

Ministry of Environment has the right to delay the entry into force of this obligation with the approval of Undersecretariat of Treasury for a year after the entry into force of related general conditions, tariffs and instructions.

Interesting enough, the article states that the general conditions for each liability insurance, which will be arranged for liable parties, will be approved by the Undersecretariat of Treasury. This is because, it is anyway the Treasury which issues these general conditions once and after all insurance contracts have to include these clauses.

According to the Law, tariffs and instructions of this liability insurance will be determined by the Minister to which the Undersecretariat of Treasury is subordinate, but the Minister may prefer not to determine a tariff.

Provisional Article 1 of the Law states a one year time period for the publication of general conditions, tariffs and instructions. Currently there is not any development on this issue.

Another important piece of legislation is “the Law on Principles of Emergency Intervention and Compensation of Damages against the Pollution of Vicinity of the Sea by Oil and Other Hazardous Substances”. This law entered into force following the publication in the Official Gazette no: 25752, dated 11.3.2005.

Article 6 of the Law regulates the liability. According to the article, operators of the ships and coastal facilities are responsible from the pollution and imminent treat of pollution. In this respect, they are responsible from the compensation of cleaning costs, costs for preventive measures, damages to living resources and marine ecosystems, remediation of damage to environment, transportation of collected wastes, damages to natural or living resources which are used for a living, damages to private property, death or injury of people, loss of income, damage to profit capacity and other public damages.

Article 8 of the Law is entitled as “Financial Liability Guarantees”. For the ship operators, the Article refers the issue to the related articles of the international conventions that Turkey is a party. On the other hand, the coastal facilities should have adequate liability insurance for the liabilities arising from the article 6 of the Law. Otherwise, operators will not be allowed to have their operation license.

According to the Law, this compulsory insurance has to be provided from the insurance companies, which are determined by the Undersecretariat of Treasury, or from the pool, which will be created by these companies. For this type of insurance, the Law envisages special general conditions. The Undersecretariat of Treasury will be responsible for issuing these general conditions. However, the Ministry of Environment can delay the entry into force of this obligation with the approval of Undersecretariat of Treasury for a year after the entry into force of related general conditions, tariffs and instructions.

On the other hand, Provisional Article 1 of the Law states 1 year time period for the publication of any regulations related to this Law and 6 months for the publication of general conditions, tariffs and instructions. The time period has already expired but still there is not any development on the general conditions.

Moreover, the Ministry of Environment published the “Implementing Regulation of the Law on Principles of Emergency Intervention and Compensation of Damages Against the Pollution of Vicinity of the Sea by Oil and Other Hazardous Substances” in the Official Gazette no. 26326, dated 21.10.2006 with a delay of 7 months. But the general conditions, tariffs and instructions are not published yet.

Article 41 of the Regulation is entitled as “Financial Liability Guarantees”. This article provides that the coastal facilities should have adequate liability insurance for the stated damages. Otherwise they are not allowed to have operation license. This compulsory insurance has to be provided from the insurance companies, which are determined by the Undersecretariat of Treasury. The Article also states that general conditions for the compulsory insurance will be published by the Undersecretariat of Treasury. Tariffs and instructions of this insurance will be determined by the Minister to which the

Undersecretariat of Treasury is subordinate. The Minister may prefer not to determine a tariff.

In the Article 3 of the Regulation “damage” is defined as the costs, which result from the pollution or imminent treat of pollution. These include cleaning costs, costs for preventive measures, damages to living resources and marine ecosystems, remediation of damage to environment, transportation of collected wastes, damages to natural or living resources which are used for a living, damages to private property, death or injury of people, loss of income, damage to profit capacity, other public damages and other costs relating to the determination and compensation of damages and resolution of disputes.

The content of the compulsory insurance, which is envisaged in “the Law on Principles of Emergency Intervention and Compensation of Damages against the Pollution of Vicinity of the Sea by Oil and Other Hazardous Substances” is quite wide. It includes compensation for civil liabilities as well as remediation of pure ecological damage. Currently it is not possible to find a reinsurance support for this type of environmental risks. Accordingly Turkish insurance market is not ready to provide insurance products for these risks. Even in Europe, these types of insurance products are not available. Therefore there are enough reasons to believe that competent authority has not been negligent to issue related general conditions. But it considered the oppositions of the insurance sector and decided to leave the issue in abeyance until to find a reasonable solution for the parties.

4. THE EU ENVIRONMENTAL LIABILITY DIRECTIVE AND INSURANCE

4.1. A Brief History of the Environmental Policy of the EU

In the original Treaty of Rome, which came into force in 1958, there was no reference to environmental policy of the Community (Weatherill and Beaumont, 1999). Sometimes a directive dated 1967 (67/548/EEC) dealing with standards for classifying, packaging and labeling dangerous substances are regarded as the EC's first environmental directive. However, this directive focused on the facilitation of trade and the 6th amendment of this directive dated 1979 (79/831/EEC) which introduced the protection of the environment from the dangerous effects of substances as well as a notification system for new substances might more genuinely be regarded as an environmental directive (Grant et al., 2000).

European environmental protection soft law dates back to the Paris Summit in October 1972 (Weatherill and Beaumont, 1999). Following the United Nations Conference on the Human Environment in June 1972, in Paris Summit, the heads of state or government decided that a common environmental policy was essential (McCormick, 2001, Weatherill and Beaumont, 1999). Since 1972 the Community has adopted some 200 pieces of legislation, chiefly concerned with limiting pollution by introducing minimum standards, notably for waste management, water pollution and air pollution (European Parliament, 2006). In addition, the EU has played a significant role in drawing up a number of international environmental conventions, for example the Vienna Convention and the Montreal Protocol on the Protection of the Ozone Layer, the UN Climate Convention and the Kyoto Protocol.

Beside these developments, in 1973, the European Community published its first Environmental Action Plan (EAP) (Akdur, 2005). Currently, the 6th Environmental Program is in force. The current program identifies four environmental areas for priority

actions: Climate Change, Nature and Biodiversity, Environment and Health and Quality of Life, Natural Resources and Waste (European Commission, 2006).

4.2. Legal Bases of the Environmental Policy of the EU

Environmental Policy competence is divided between supranational and member state authorities in the EU (Grant et al., 2000).

As mentioned above, in Treaty of Rome there was no reference to environmental policy of the Community. The entry into force of the Single European Act in 1987, adding a title specifically on this subject to the Treaty establishing the European Community, is generally acknowledged as a turning point for the environmental policy (European Parliament, 2006). Because, with the entry into force of the Single European Act, environmental protection was formally recognized as a part of the legal competence of the European Community (McCormick, 2001). Since the Rome Treaties were revised by the Treaties of Maastricht and Amsterdam, the legal basis for Community environment policy has been Articles 174 to 176 (ex Articles 130r to 130t) of the EC Treaty (European Parliament, 2006). In these articles, the general goal of protecting and improving the environment, safeguarding people's health, encouraging the careful use of natural resources and fostering high environmental standards on an international level, are set out. The Articles provide the basis in EU law for directives and recommendations in areas that deal with pollution, waste and the protection of biological diversity etc.

4.3. The Problem of Conflict between Environmental Policy and Other Policies of the EU

The goals of the environmental policy frequently conflict with other objectives of the Union's policies, for example free movement of goods and services on the internal market or agriculture protection or trade policy. Free movement of goods, services, capital and persons and the establishment of equal conditions of competition across national boundaries, are the fundamental principles of the EU's internal market. Any limitation of these principles can only be accepted as exceptions to the internal market rules (TEAM, 2004).

According to Article 176 of the Treaty, Member States can, in accordance with the principle of subsidiarity, decide to maintain or impose stricter environmental rules than what the EU law demands. But if these rules are liable to affect the internal market, a Member State has to prove with new scientific evidence that there is an essential need to impose them, according to Article 95(5) of the Treaty governing the approximation of laws in the internal market. So stricter rules on environmental matters will only be accepted if the principles of the internal market are not violated (TEAM, 2004).

The ECJ has ruled in several law cases that national environmental laws are in breach of internal market rules. The Court first dealt with the tension between free trade and environmental priorities in the *Inter-Huiles* case[2]. In this case the conflict arose during the transposition of an EU environmental legislation which establishes a waste disposal scheme and in this context creates a barrier to those individuals, such as waste collectors, who transport their goods across member state borders (Cichowski, 2000).

4.4. Environmental Liability in the European Union

4.4.1. Early Developments and Historical Background of the Environmental Liability Directive

In October 1989, the European Commission first issued a "proposal for a regime for Civil Liability for Damage caused by Waste". As modified in 1991, the proposal stipulated strict liability for polluters and equivalent persons. Ecological damage, defined, as "a significant physical, chemical or biological deterioration of the environment" was included. The proposed liability regime protected as a public good all resources of nature not considered to be property. Following the opposition from the waste disposal industry, the proposal for a liability regime was not debated in the Council. Draft directives for waste disposal sites, brought forward again in 1993, also failed to gain approval. The modified 1993 proposal applied the polluter pays principle to disposal-site environmental damage. It would have obligated operators to pay for correcting any environmentally harmful effects caused by operations at their sites, making them strictly liable under civil

[2] Case 172/82 *Syndicat National des Fabricants Raffineurs d'Huiles de Graissage and Others* v. *Groupement d'Intérêt Économique "Inter-Huiles" and Others* [1983] ECR 555.

law for any damage caused. Waste disposal companies also had to provide guarantees and contribute to a cleanup fund. As finally passed in 1999, the directive on waste disposal sites does mention the polluter pays principle, but contains no concrete liability provisions. Rather, member states must ensure that the operator covers all of a waste disposal site's costs for set-up, operation, closure and post closure, for a period of at least 30 years.

Besides these developments, the European Commission issued a Green Paper on remedying environmental damage in 1993. Afterwards, in February 2000, the European Commission adopted a White Paper on environmental liability with the objective of triggering a debate on how the principle could be applied to the EU's environmental policy. As a follow-up to the White Paper, the European Commission issued a draft directive on the restoration of and liability for environmental damage in January 2002.

The directive was approved by Parliament and Council in February 2004 after a conciliation committee solved disagreements between these institutions. The Directive came into effect with its publication in the Official Journal of the European Union on 30 April 2004. The Directive envisages three years time period for the transposition.

4.4.2. Commissions Green Paper and Insurance Issue

On 14 May 1993, the European Commission presented its "Green paper on remedying environmental damage", which stated that implementation of the polluter pays principle was dependent on liability under civil law.

In the Green Paper it was stressed that discussions of civil liability, inevitably raise questions about insurability, since insurance is a means of controlling the risk of economic loss. Insurance serves as an important compensation mechanism where damage occurs accidentally and restoration costs are covered by the insurance policy. Moreover, it was pointed that if an insurer links availability of insurance to the quality of an enterprise's risk management, it may have a deterrent effect in promoting better accident prevention and other environmental protection controls over the economic activity. But, the difficulties were also stated and it was accepted that insurers were hesitant to provide coverage for

uncertain types and probabilities of damage that may occur, or if unpredicted losses drain the pool of money. In addition the green paper stated following considerations:

"The civil liability regime established, the absence of limits on liability, and the coverage of particular risks such as gradual pollution are some of the factors which make It hard for Insurers to determine the insurability of what are already extremely complicated risks and, In some cases, to decide how much cover they are able to provide. They react by raising the prices of premiums or by withdrawing from the market of environmental liability insurance altogether. Today, insurance coverage for pollution-related damage can be difficult and even impossible to obtain in some cases. It is a relatively new service and not all insurers have the technology or capacity yet for providing it. At present there are many cases where studies on the insurability of these risks are preceded by preliminary technical studies. Insurers may limit their potential losses contractually by excluding specific risks from coverage or by lowering the maximum amount of coverage. They may involve the policy holder financially the effort to avoid loss by applying sizable deductibles to each loss. Insurers have also sought to limit coverage of accidental losses to damage occurring by a "sudden " event, a definition which excludes damage caused gradually, such as a slow leak from an underground tank. France, Italy, and the Netherlands have intervened to set up pools of insurance to cover gradual as well as sudden pollution. There is some movement today to require certain industries or activities posing particular hazards to cover their potential liability through some kind of financial security. For example, the recent German Environmental Liability Act requires specific Installations to ensure security to cover liability .The proposed Directive for civil liability for damage resulting from waste would require the liability of the producer and the eliminator to be covered by insurance or any other financial security. A number of concerns arise when insurance is required. If insurance compulsory, enterprises must be able to obtain coverage on the market for the required amount. Such coverage may not be available. If it is available and the cost of restoring the environmental damage is above the policy amount, the liable party must still pay the additional amount." (Green Paper, 1993).

Another issue, which was important in the Green Paper, was the role of insurers. Because, under compulsory insurance, insurers might become licensor industry, by providing or withholding insurance coverage according to whether the industry member

seeking coverage was a “good” or a “bad” risk. In practice, some insurers already evaluated the quality of a firm risk management and loss prevention measures, before providing environmental liability coverage. From an environmental protection point of view risk evaluation by the insurance industry is beneficial, since reduces the risk of environmental damage at the same time that reduces the insurers’ risk of economic loss. However, the problem was the “bad risks” that cannot obtain insurance coverage.

The Green Paper also raised the question, what will happen if the EU demands a compulsory insurance but the operator cannot provide it? Imposing liability insurance on firms and activities which represent a danger to the environment presupposes that the insurability of such risks wil1 be determined and if with due regard to the nature of the risk, insurance is made available, the conditions of coverage and the system of civil liability envisaged will have to be established. It stated that state intervention may be necessary if private insurers do not provide insurance coverage adequate to cover the risk of environmental damage, or if premiums are too high especially for the small and medium sized enterprises. As stated above, the Green Paper also pointed experiences of countries such as France, Italy and the Netherlands, which have insurance pools for covering pollution damage and stated that the lessons to be learned from the German law on environmental liability, which contains specific provisions on insurance.

As briefly explained above the Green Paper dealt with the issue of civil liability and discussed the compulsory insurance. But even for the civil liability claims, insurers declared that they had limited experience and they did not favor compulsory insurance.

4.4.3. Commissions White Paper and Insurance Issue

The “White Paper on Environmental Liability” of 9 February 2000 incorporated the results of both studies as well as various commentaries on the Green Paper. The purpose of the White Paper on environmental liability was to examine how the polluter pays principle could be applied with a view to implementing Community environment policy. The conclusion was that a Directive would be the best way to establish a Community environmental liability scheme.

The White Paper suggested the following principles for a future the EU liability regime. Strict liability should apply to activities potentially dangerous to the environment. Commonly accepted defenses must be recognized. Finally, the plaintiff's burden of proof must be somewhat alleviated. Both types of damage were to be included: traditional (harm to health and property; financial loss) and ecological (historical pollution, damage to biodiversity). There was to be an obligation that compensation sums paid by the polluter should in fact be spent on environmental restoration. Financial guarantees should provide cover for liability exposures.

The White Paper claimed that for the principle of liability to be effective; polluters must be identifiable, the damage must be quantifiable, there must be a link between the polluter and the damage. In addition, the principle of liability cannot be applied for dealing with pollution of a widespread, diffuse character such as climate change.

The White Paper stated that in most of the Member States, there are laws on liability for damage caused by activities that are hazardous to the environment, but these laws only apply with respect to damage to human health or property, but there was a need for an environmental liability regime, which covers damage to natural resources, at least for resources that are already protected by Community legislation; Wild Birds and Habitats Directives.

The White Paper argued that the availability of insurance is crucial in promoting a viable liability regime, but did not propose compulsory insurance. Instead it proposed a gradual approach: "Insurance availability for environmental risks, and in particular for natural resource damage, is likely to develop gradually. As long as there are not more widely accepted measurement techniques to quantify environmental damage, the amount of the liability will be difficult to predict. However, the calculation of risk-related tariffs is important for the fulfilment of liabilities under insurance contracts and insurance companies are required to establish adequate technical provisions at all times. Developing qualitative and reliable quantitative criteria for recognition and measurement of environmental damage will improve the financial security available for the liability regime and contribute to its viability, but this will not occur overnight and is likely to remain expensive. This justifies a cautious approach in setting up the liability regime. Capping

liability for natural resource damages is likely to improve the chances of early development of the insurance market in this field, though it would erode the effective application of the ‘polluter pays’ principle.” (White Paper, 2000).

The White Paper accepted the importance of insurance as the Green Paper. However, it stated that compulsory financial security is not a generally accepted legal requirement in laws of the member states. In addition, contrary to the Green Paper’s positive approach, the White Paper accepted the implementation problems of the compulsory financial security system of German law.

4.4.4. Environmental Liability Directive

Based on reactions to the White Paper and on additional studies, the European Commission, in January 2002, presented its “proposal for a Directive of the European Parliament and of the Council on environmental damage”, mentioned above in connection with the polluter pays principle. Its goal was to prevent ecological damage and to settle questions of liability and ensure that the damage is remediated. The Directive entered into force with its publication in the Official Journal on 30 April 2004. The Member States have 3 years for transposition of the Directive into national law. The Environmental Liability Directive, specifically implements the "polluter pays principle". Its fundamental aim is to hold operators whose activities have caused environmental damage financially liable for remedying this damage. In this context, the Directive does not have any provision concerning limit for liable polluters. Importantly, civil liability claims are out of the scope of the Directive.

It is important to stress that before the publication of the Directive, in all Member States, there were national civil liability regimes that cover damage to private property and persons. But compensation for purely ecological damage was only provided in a few Member States so far (Schinzler, 1999). Even though the existence of some national public law provisions allows public authorities to pursue polluters in cases of water or soil pollution, the authorities usually have a wide margin of discretion whether to really act against the polluter.

Article 174 of the EU Treaty states that the EU policy on the environment "shall be based on the precautionary principle and on the principles that preventive action should be taken, that environmental damage should as a priority be rectified at source and that the polluter should pay." In this context, as mentioned above, the Directive, specifically implements the polluter pays principle. It is expected that this will result in an increased level of prevention and also precaution. In addition, the Directive holds those whose activities have caused an imminent threat of environmental damage liable to taking preventive actions. It is expected that both aspects will result in a higher degree of environmental protection throughout Europe and will minimize the differences of the liability systems from country to country (European Union, 2004, Schinzler, 1999).

Provisions of the Directive are prospective only, therefore liability applies only to environmental damage that was caused after implementation of the new Directive. Remediation includes measures taken at the damaged site and other complementary measures elsewhere. Prescribed remedial measures must be selected efficiently and in accordance with the principle of proportionality. The authority must also decide to what extent natural recovery can take place. The Directive addresses the question of how environmental damage should be remedied and who should carry the cost. How these objectives are to be achieved is up to the Member States' themselves as all other directives. The Directive does not require Member States to remedy environmental damage if the polluter cannot be identified or is insolvent. The competent authorities will decide themselves whether this type of damage will be remedied or not. But if the state itself or a state-owned body is the polluter, the State will have to pay like any other polluter (European Union, 2004).

4.4.4.1. Definition of environmental damage. Environmental damage is defined in Article 2 of the Directive:

> "**a) Damage to protected species and natural habitats**, which is any damage that has significant adverse effects on reaching or maintaining the favourable conservation status of such habitats or species. [...]
>
> Damage to protected species and natural habitats does not include previously identified adverse effects which result from an act by an operator which was expressly authorised by the relevant authorities in accordance with provisions implementing Article 6(3) and

(4) or Article 16 of Directive 92/43/EEC or Article 9 of Directive 79/409/EEC or, in the case of habitats and species not covered by Community law, in accordance with equivalent provisions of national law on nature conservation.

b) Water damage, which is any damage that significantly adversely affects the ecological, chemical and/or quantitative status and/or ecological potential, as defined in Directive 2000/60/EC, of the waters concerned, with the exception of adverse effects where Article 4(7) of that Directive applies.

c) Land damage, which is any land contamination that creates a significant risk of human health being adversely affected as a result of the direct or indirect introduction **in, on or under land**, of substances, preparations, organisms or micro-organisms."

The Directive limits the scope of biodiversity with damage to species and habitats protected under the EU legislation. Moreover, economic damage is excluded from the scope of the Directive.

4.4.4.2. Liability regime of the Directive. The Directive provides for two distinct but complementary liability regimes. The first one is strict liability which applies for environmental damage to "protected species and natural habitats" (ecological damage) in accordance with Article 2, as a result of risky or potentially risky occupational activities which are covered by other EU directives. These activities include, amongst others, industrial and agricultural activities requiring permits under the Integrated Pollution Prevention and Control Directive, waste management operations, the release of pollutants into water or into the air, the production, storage, use and release of dangerous chemicals, and the transport, use and release of genetically modified organisms (GMOs). These activities are listed in Annex III of the Directive. Under this regime, an operator can be held liable even of he has not committed any fault, though there are a few cases in which he can be exempted from liability (Busenhart et al., 2006).

The second liability regime applies to all professional activities, including those outside Annex III, but an operator will only be held liable if who was at fault or negligent and if who has caused damage to protected species and natural habitats protected at the EU level (under the 1992 Habitats and 1979 Birds Directives) (Busenhart et al., 2006).

In this liability scheme, it will be public authorities' duty to identify liable polluters and ensure that they undertake themselves, or finance, the necessary preventive or remedial measures, which the Directive details.

Table 4.1. Basic requirements of the Directive (Defra, 2006).

Type of damage	**Liability for operators of Annex iii occupational activities**	**Liability of operators of other occupational activities**	**Standard of remediation**	**Type of remediation applicable**
To protected species and natural habitats	Strict	Fault based	Return the environment as a whole back to baseline condition, and remove any significant risk of an adverse effect on human health	Primary Complementary Compensatory
To water	Strict	None	Return the environment as a whole back to baseline condition, and remove any significant risk of an adverse effect on human health	Primary Complementary Compensatory
To land	Strict	None	The removal of any significant risk of an adverse effect on human health	Remove significant risk of adverse effects on human health, taking account of actual or planned future use

4.4.4.3. Civil liability. In fact, at the beginning, the introduction of the German Environmental Liability Act in 1990, which imposed strict liability on specified hazardous operations for property damage and bodily injury caused to third parties through pollution of the air, soil and water, was at the time expected to be a blueprint for a new EU Directive on liability for environmental impairment. But, during lengthy debate and re-drafting period over the last 10 years, the Directive has developed in a rather different direction and focuses on creating liability within public law (Guy Carpenter, 2004).

There are existing examples of public laws in Europe, which employ the 'polluter-pays' principle, regardless as to whether third parties are directly affected. Examples soil protection laws introduced from 1994 onwards in the Netherlands, Belgium, Denmark and the UK which oblige polluters to clean up damage to the soil regardless of third party losses. The key new concept that the EU Directive introduces into public law is liability for

ecological damage. This concept has only previously existed in above mentioned 'Superfund' legislation of the U.S. (Guy Carpenter, 2004).

The Directive does not envisage compensation to members of the public. Its purpose is to prevent environmental damage from occurring and, if it occurs, to ensure that it is remedied. If environmental damage creates harm to members of the public or affects their goods and property, they can sue under national civil liability laws. But according to the Article 12 (1) of the Directive, natural and legal persons:

- affected or likely to be affected by environmental damage;
- having a sufficient interest in environmental decision making relating to the damage;
- alleging the impairment of a right, where administrative procedural law of a Member State requires this as a precondition,

will be entitled to submit to the competent authority any observations relating to instances of environmental damage or an imminent threat of such damage of which they are aware and shall be entitled to request the competent authority to take action under this Directive. Moreover according to the same Article, non-governmental organizations promoting environmental protection will have a right to require the competent authorities to take action for prevention or restoration as well.

4.4.4.4. Exceptions and defenses to liability. In fact, when the Directive is implemented properly the possibilities for polluters to take advantage of differences among Member States' approaches to avoid liability will be greatly reduced, and the polluter pays principle will be the norm rather than the exception. But the Directive identifies some exceptions from its scope in anyway (Defra, 2006). According to the Article 4, the Directive does not cover environmental damage or an imminent threat of such damage caused by:

- an act of armed conflict, hostilities, civil war or insurrection;
- a natural phenomenon of exceptional, inevitable and irresistible character.
- an incident in respect of which liability or compensation falls within the scope of any of the International Conventions listed in Annex IV, including any future amendments thereof, which is in force in the Member State concerned.

- activities the main purpose of which is to serve national defence or international security nor to activities the sole purpose of which is to protect from natural disasters.
- pollution of a diffuse character. Because it is often difficult to identify the ways in which a large number of pollution factors contribute to environmental damage and in such cases liability is an inadequate instrument (Munich Re, 2001). But if it is possible to establish a causal link between the damage and the activities of individual operators then this exception will not be applied.
- nuclear risks which are covered by the Treaty establishing the European Atomic Energy Community or caused by an incident or activity in respect of which liability or compensation falls within the scope of any of the international instruments listed in Annex V, including any future amendments thereof.

Moreover it is stated in the same Article that "This Directive shall be without prejudice to the right of the operator to limit his liability in accordance with national legislation implementing the Convention on Limitation of Liability for Maritime Claims (LLMC), 1976, including any future amendment to the Convention, or the Strasbourg Convention on Limitation of Liability in Inland Navigation (CLNI), 1988, including any future amendment to the Convention.". In can be easily seen that in some issues such as nuclear risks, preference was given to international environmental liability in the Directive, because of two reasons; either their scope is greater as they apply on a worldwide basis and legally bind more countries than only the EU Member States or their regime provides for additional guarantees, for example by operating with compensation funds.

Even though the operators' stated contrary opinions, there is no "permit" or "state of the art"' defense in the Directive (Small Business Europe, 2003). But according to the Article 8 of the Directive, Member States may provide these defenses to the operators (Mott, 2006). Thus, subject to individual country legislation, a polluter may be able to avoid bearing the remedial actions if he can prove that he was not at fault or negligent and that either (Guy Carpenter, 2004).

- an emission was expressly authorized by an official permit; or

- an emission was not considered likely to cause environmental damage according to the state of scientific and technical knowledge at the time when the emission was released or the activity took place.

4.4.4.5. Remedial measures. Mainly Article 7 and Annex II of the Directive deal with the remedial measures. In this context, the Directive envisages different remedial measures depending on the type of damage. The Directive demands the decontamination of soil until it no longer poses any significant risk to human health. On the other hand, options for remediation of environmental damage in relation to water or protected species or natural habitats are more complex. Regarding damage to protected species and natural habitats as well as water, the competent authorities have discretion in deciding which measures the responsible operator has to take, considering the remedial options available to restore the damaged natural resources either on its original place or somewhere else. In any case, remedial measures must definitely compensate for the loss (Munich Re, 2006).

According to the Directive, remedying of environmental damage, in relation to water or protected species or natural habitats, is achieved through the restoration of the environment to its baseline condition by way of primary, complementary and compensatory remediation (Annex II (1) of the Directive):

- Primary remediation is any remedial measure which returns the damaged natural resources and/or impaired services to, or towards, baseline condition;
- Complementary remediation is any remedial measure taken in relation to natural resources and/or services to compensate for the fact that primary remediation does not result in fully restoring the damaged natural resources and/or services;
- Compensatory remediation is any action taken to compensate for interim losses of natural resources and/or services that occur from the date of damage occurring until primary remediation has achieved its full effect.

When deciding between remediation options, the authorities have to consider various factors, such as the effect of each option on public health and safety, cost of implementing the option, likelihood of success of each option, geographical linkage to the damaged site, length of time it will take for the restoration of the environmental damage to be effective (Annex II (1.3.1) of the Directive).

4.4.5. Environmental Liability Directive and Insurance

Compulsory insurance has been a big issue before and during the preparation of the Directive. During the discussions, European insurers and representatives of the small and medium size enterprises were in favor of a non-compulsory system for financial security (CEA February, 2003, Small Business Europe, 2003). In contrary, environmentalist groups were in favor of a compulsory system (See. WWF and BirdLife, 2000). Consequently, compulsory insurance provision was deleted from the draft in Brussels and compulsory cover was not envisaged at the time being (Mott, 2006).

On the other hand, according to the Directive, European Commission, before 30 April 2010 will prepare a report on the effectiveness of the Directive in terms of actual remediation of environmental damages, on the availability at reasonable costs and on conditions of insurance and other types of financial security for the activities covered by Annex III of the Directive. The report shall also consider in relation to financial security the following aspects: a gradual approach, a ceiling for the financial guarantee and the exclusion of low-risk activities. In the light of that report, and of an extended impact assessment, including a cost-benefit analysis, the Commission shall, if appropriate, submit proposals for a system of harmonized mandatory financial security (Article, 14 (2), Bocken, 2006).

Moreover, the Directive demands from Member States to take measures to encourage the use by operators of any appropriate insurance or other forms of financial security and the development of financial security instruments and markets in order to provide effective cover for financial obligations under the Directive (Para.27, Article 14 (1)).

It can be easily seen that the issue has not been resolved yet. It just had been delayed. Actually the problem in Europe is that financial security products purely related to environmental damage do not exist yet. Beside other difficulties such as the problem of insurance and reinsurance market capacity, lack of information is a very important problem to develop these types of products. But, it should be considered that there has been no demand of operators for insurance policies covering these types of risks so far. Operators

will now be exposed to liability and information on damage incidents and costs to remedy the damage which are vital to develop new products will become available.

In this context, when we look at the general picture, it looks quite reasonable to expect the emergence of financial security products in the coming days. Even though insurance is not the only way to get financial security and there are other forms of financial security, such as; bank guarantees, the pooling of funds, financial guarantees given to a subsidiary by the parent company, self insurance etc., in practice none of them can replace insurance.

4.4.5.1. Opportunities for the insurance industry. The Directive offers the insurance industry the chance to develop covers of environmental damage for claims based on public law to accompany existing covers of personal injury and property damage from civil law claims (Hackl and Roos, 2004). The insurance industry should use this chance and develop solutions (Lahnstein, 2001)

As mentioned above, by 30 April 2010, the European Commission will report on the feasibility of a compulsory financial security scheme. Such a scheme could, of course, include compulsory insurance. This will represent a major challenge for the insurance and reinsurance industry. Whilst it is possible to quantify third party bodily injury, property damage and financial loss related to environmental pollution from past experience, there is little knowledge or experience of quantifying either the amenity value of natural resources or the cost of restoring an ecosystem to the exact state it was in prior to the pollution damage taking place; determining what costs are reasonable and what costs are simply economically out of proportion to the ecological loss suffered will be a very difficult issue (Guy Carpenter, 2004).

Actually, the underwriting results of existing environmental impairment liability schemes have for the most part been very good, as is evidenced by *ASSURPOL* in France. Moreover, in the US, a number of largely finite cost containment insurance schemes have been successfully pioneered to finance clean-up cost over-run. But such covers have been able to rely on detailed risk surveys and risk management schemes. There is also the problem of insurance and reinsurance market capacity. Subject to research on potential costs of clean-up, it may be possible for the market to extend its substantial existing

capacity for third party liability arising out of sudden and accidental pollution damage to include remedial costs for ecological damage. However there has been an historic lack of capacity for all forms of gradual pollution cover, and this is hardly likely to change in the face of the extension of gradual pollution liability to include ecological damage (Guy Carpenter, 2004).

In different occasions, the representative institution of European insurers and reinsurers CEA declared that European insurers are willing and able to offer solutions as regards the setting up of schemes to cover environmental damage within the limits of insurability and stated that financial security provisions will only work if the market can provide the necessary instruments (CEA, February 2003, CEA, January 2004). In this context, CEA stated that at the moment, biodiversity damage is not measurable and thus cannot be covered by existing insurance solutions (CEA, May 2003, CEA, February 2003, CEA, January 2004). More work needs to be done to make those risks insurable and the development of insurance products to cover such risks should be encouraged progressively (CEA, March 2004). Although there is no real experience of compensating this type of damage either in Europe or in the US, insurers are willing to contribute to developing this concept as well.

After the publication of the Directive, CEA declared that financial security provisions of the Directive allow for greater flexibility and these provisions will enable insurers, over time, to develop new products to cover environmental risks. On the other hand, as of today, European insurers can offer products covering parts of the scheme such as clean-up of soil and water (CEA, March 2004).

But as mentioned in previous chapters, European insurers oppose compulsory insurance and they do not consider it as an opportunity. The reason behind is that compulsory insurance is only possible in a market which has reached maturity, as in the case of motor insurance, and when risks are clearly identifiable and similar (CEA, February 2003). But clearly, this is not the case for environmental liability, where risks differ substantially from one operator or sector to another. European insurers claimed that compulsory insurance provision will force many businesses to trade without any financial protection as financial security instruments will not be sufficiently available (CEA, May

2003, CEA, January 2004). Moreover, in general, insurers do not want to be placed in the role of an environmental policeman within the process of assessing the risks to be covered and the qualifications as to their acceptability, thereby in fact deciding who is allowed to continue to do business and who not. This is a task, which has to be performed exclusively by the governmental authorities (Spühler, 1996). Furthermore, CEA stated that companies which do not act negligently and operate in accordance with all current scientific knowledge or administrative authorization should not be held liable and so-called "state of the art" and "compliance with permit" defenses remain crucial basic conditions for insurability (CEA, February 2003).

4.4.5.2. Environmental Liability Directive and risk assessment of the insurance industry. The insurance industry assesses risk on the basis of loss severity multiplied by loss frequency. However at least at the beginning, frequency and severity are unknown in this area due to the absence of any loss history. In this kind of cases the possible alternative is to generate loss scenarios on the basis of process analyses and models. This approach is named as exposure-based hazard assessment and comprises the following steps (Busenhart et al., 2006):

- process description;
- derivation of process hazards;
- identification of hazardous substances;
- development of incident scenarios;
- description of the effects of the incident;
- quantification of the resulting costs.

But it should be considered that this type of risk assessment does not usually provide adequate information to insure a risk. Besides the reinsurance problems, insurers would not prefer to insure this type of risks instead of others. Because all insurers have a limited capacity and normally they prefer to use this capacity in most efficient and profitable way.

4.4.5.3. An alternative solution: Creation of an insurance or reinsurance pool to provide a cover for environmental risks stated in the Directive. As mentioned above, the new concept that the EU Directive introduces into public law is liability for ecological damage. The Directive does not envisage compensation to members of the public. Its purpose is to

prevent environmental damage from occurring and, if it occurs, to ensure that it is remedied. The directive does not have any limit for liable polluters.

For the time being, it is not possible to find reinsurance for the liabilities stated in the Directive and it is one of the difficulties for insurance companies to develop suitable products. In these types of situations creating an insurance or reinsurance pool, can allow insurers and reinsurers to acquire experience of risks with which they are unfamiliar and increase the market capacity to serve operators who need this type of coverage. These pools also help collaboration between insurers in the calculation of the average cost of covering a specified risk and helps creation of joint studies on the probable impact of extraneous circumstances that may influence the frequency or scale of claims, or the yield of different types of investments. In this way insurers can count a risk premium for a specific risk easier. Moreover, preparation of standard policy conditions or standard individual clauses by the pool can produce some benefits. It helps to meet legal obligations by insurers and operators. In this way an operator can clearly know that its liabilities are covered by the related insurance product.

If we look at the subject from the point of the EU competition policy, these types of pools are considered always as a problematic issue. However in its *Assurpol* decision the Commission agreed that environmental risks have a special importance and can not be easily covered by an individual insurer. Moreover the Commission decided that this pool enables a larger number of insurance companies to offer a product better attuned to serving customer needs, the freedom of choice of consumers will be increased. Referring to this approach, I strongly believe that if European insurers create a pool to insure or reinsure the liabilities arising from Environmental Liability Directive, they will not face any competition law problem.

On the other hand, the liabilities which are stated in the Directive are quite wide and for the time being it is not easy to find an insurance solution even though the possibility of the creation of a pool by European insurers and reinsurers.

5. CONCLUSION

During the past several decades, human beings have become much more aware of their impact on the environment. Determining the impact that human activities have on the environment has been a source of contentious debate all around the world. It is generally accepted that environmental protection requires a multidisciplinary approach and this is not narrowed to purely technical or legal details. In this context, financial instruments can play an important role in the protection of environment and the sustainability of economic activities.

Throughout years, insurers have developed different products and systems to meet needs in the environmental field. Today different types of first party and third party environmental covarages are available, but it is not possible to argue that these products meet all expectations. In some cases environmental laws enshrine compulsory insurance or financial guarantee provisions as a license condition, but sometimes operators prefer to have these insurance coverages voluntarily.

It is doubtful that mandating environmental liability insurance serves public interests in all cases. While considering the policy option to introduce compulsory environmental insurance for operators, the maturity and competitiveness of the insurance market should be carefully examined. In this context, financial guarantee provisions of the German Environmental Liability Act can be given as an example. Despite the existence of provisions for compulsory financial guarantee in German Environmental Liability Act 1990, there is still a dramatic gap between legislative compulsory provisions, and what the insurance and reinsurance market can provide. Moreover, if the Turkish example is examined, it can be easily seen that the compulsory insurance mandated by law does not meet the envisaged aim. Despite the existence of compulsory environmental insurance provisions in different laws, these provisions are not implemented in practice. In this context, it is wrong to assume that only introducing a compulsory insurance regime would be the solution and would enlarge opportunities for the operator to transfer the consequences of environmental liability risks to the insurer on better conditions (Spühler,

1996). On the other hand, voluntary environmental insurance and reinsurance pools which operate in Europe are quite good examples to provide coverage against pollution risk.

In Europe, after the publication of the Environmental Liability Directive in the Official Journal on 30 April 2004, European operators and European insurance industry are faced with a new challenge. Actually, in all EU Member States, there are national civil liability regimes that cover damage to persons and property. But they only seldom cover damage to the wider environment. The Environmental Liability Directive, specifically implements the "polluter pays principle". Its fundamental aim is to hold operators whose activities have caused environmental damage financially liable for remedying this damage. It is expected that this will result in an increased level of prevention and precaution. In addition, the Directive holds those whose activities have caused an imminent threat of environmental damage liable to taking preventive actions. Environmental damage includes damage to species and natural habitats protected at the EU level, to waters as well as land contamination, which causes significant risk of harming human health. The parties potentially liable for the costs of preventing or remedying the environmental damage are the operators of the risky or potentially risky activities listed in Annex III of the Directive. Other economic operators may also be liable for the costs of preventing or remedying damage to protected species and natural habitats, but only in case they are found to be at fault or negligent. The member states have to transpose the Directive into their national laws before 30 April 2007.

For the time being, the Directive does not oblige operators to ensure coverage of their potential liabilities by appropriate financial security products, such as insurance, Member States are just required to encourage the development of such security instruments and their use by the operators. But Member States can decide to impose stricter rules than the provisions of the Directive. In this context, Spanish and Czech draft laws prepared for the transposition of the Directive include compulsory insurance provisions.

This is a challenge for European insurers because in a very close future they will face the demand of operators who would like to have adequate insurance coverage for their activities. The umbrella association of the European insurers and reinsurers CEA is already working on the issue and going to publish a white paper on insurability of environmental

liability in 2007. The white Paper will set the framework in which the discussion of insurability of environmental liability should take place. The work of the CEA will focus on upstream research and the identification of possible cornerstones for insurance products.

Moreover, the Commission shall present a report after six years in which it will also address financial security issue. After this report, the Commission will decide to submit proposals for a system of harmonized mandatory financial security or not. It is very important to stress that the insolvency of operators is one factor that may hinder cost recovery in line with the polluter pays principle by competent authorities and the impact of this may be limited by insurance of potential damage. However, as mentioned above, it is not possible to be optimistic about the effectiveness of implementing the compulsory insurance scheme with regard to environmental damages if the required coverage is not available in the existing insurance market. The solution could be the creation of insurance or reinsurances pools. In this way insurers may acquire experience of risks with which they are unfamiliar and increase the market capacity to serve operators who need this type of coverage.

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APPENDIX A

Environmental Liability Directive
(Directive 2004/35/CE)

L 143/56 EN Official Journal of the European Union 30.4.2004

DIRECTIVE 2004/35/CE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 21 April 2004

on environmental liability with regard to the prevention and remedying of environmental damage

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 175(1) thereof,

Having regard to the proposal from the Commission [1],

Having regard to the Opinion of the European Economic and Social Committee [2],

After consulting the Committee of the Regions ,

Acting in accordance with the procedure laid down in Article 251 of the Treaty [3], in the light of the joint text approved by the Conciliation Committee on 10 March 2004,

Whereas:

(1) There are currently many contaminated sites in the Community, posing significant health risks, and the loss of biodiversity has dramatically accelerated over the last decades. Failure to act could result in increased site contamination and greater loss of biodiversity in the future. Preventing and remedying, insofar as is possible, environmental damage contributes to implementing the objectives and principles of the Community's environment policy as set out in the Treaty. Local conditions should be taken into account when deciding how to remedy damage.

(2) The prevention and remedying of environmental damage should be implemented through the furtherance of the 'polluter pays' principle, as indicated in the Treaty and in line with the principle of sustainable development. The fundamental principle of this Directive should therefore be that an operator whose activity has caused the environmental damage or the imminent threat of such damage is to be held financially liable, in order to induce operators to adopt measures and develop practices to minimise the risks of environmental damage so that their exposure to financial liabilities is reduced.

(3) Since the objective of this Directive, namely to establish a common framework for the prevention and remedying of environmental damage at a reasonable cost to society, cannot be sufficiently achieved by the Member States and can therefore be better achieved at Community level by reason of the scale of this Directive and its implications in respect of other Community legislation, namely Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds [4], Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora [5], and Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy [6], the Community may adopt measures in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty. In accordance with the principle of proportionality, as set out in that Article, this Directive does not go beyond what is necessary in order to achieve that objective.

(4) Environmental damage also includes damage caused by airborne elements as far as they cause damage to water, land or protected species or natural habitats.

(5) Concepts instrumental for the correct interpretation and application of the scheme provided for by this Directive should be defined especially as regards the definition of environmental damage. When the concept in question derives from other relevant Community legislation, the same definition should be used so that common criteria can be used and uniform application promoted.

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[1] OJ C 151 E, 25.6.2002, p. 132.

[2] OJ C 241, 7.10.2002, p. 162.

[3] Opinion of the European Parliament of 14 May 2003 (not yet published in the Official Journal), Council Common Position of 18 September 2003 (OJ C 277 E, 18.11.2003, p.10) and Position of the European Parliament of 17 December 2003 (not yet published in the Official Journal). Legislative resolution of the European Parliament of 31 March 2004 and Council Decision of 30 March 2004.

[4] OJ L 103, 25.4.1979, p. 1. Directive as last amended by Regulation (EC) No 807/2003 (OJ L 122, 16.5.2003, p. 36).

[5] OJ L 206, 22.7.1992, p. 7. Directive as last amended by Regulation (EC) No 1882/2003 of the European Parliament and of the Council (OJ L 284, 31.10.2003, p. 1).

[6] OJ L 327, 22.12.2000, p. 1. Directive as amended by Decision No 2455/2001/EC (OJ L 331, 15.12.2001, p. 1).

(6) Protected species and natural habitats might also be defined by reference to species and habitats protected in pursuance of national legislation on nature conservation. Account should nevertheless be taken of specific situations where Community, or equivalent national, legislation allows for certain derogations from the level of protection afforded to the environment.

(7) For the purposes of assessing damage to land as defined in this Directive the use of risk assessment procedures to determine to what extent human health is likely to be adversely affected is desirable.

(8) This Directive should apply, as far as environmental damage is concerned, to occupational activities which present a risk for human health or the environment. Those activities should be identified, in principle, by reference to the relevant Community legislation which provides for regulatory requirements in relation to certain activities or practices considered as posing a potential or actual risk for human health or the environment.

(9) This Directive should also apply, as regards damage to protected species and natural habitats, to any occupational activities other than those already directly or indirectly identified by reference to Community legislation as posing an actual or potential risk for human health or the environment. In such cases the operator should only be liable under this Directive whenever he is at fault or negligent.

(10) Express account should be taken of the Euratom Treaty and relevant international conventions and of Community legislation regulating more comprehensively and more stringently the operation of any of the activities falling under the scope of this Directive. This Directive, which does not provide for additional rules of conflict of laws when it specifies the powers of the competent authorities, is without prejudice to the rules on international jurisdiction of courts as provided, inter alia, in Council Regulation (EC) No 44/2001 of 22 December 2000 on jurisdiction and the recognition and enforcement of judgments in civil and commercial matters ([1]). This Directive should not apply to activities the main purpose of which is to serve national defence or international security.

(11) This Directive aims at preventing and remedying environmental damage, and does not affect rights of compensation for traditional damage granted under any relevant international agreement regulating civil liability.

(12) Many Member States are party to international agreements dealing with civil liability in relation to specific fields. These Member States should be able to remain so after the entry into force of this Directive, whereas other Member States should not lose their freedom to become parties to these agreements.

(13) Not all forms of environmental damage can be remedied by means of the liability mechanism. For the latter to be effective, there need to be one or more identifiable polluters, the damage should be concrete and quantifiable, and a causal link should be established between the damage and the identified polluter(s). Liability is therefore not a suitable instrument for dealing with pollution of a widespread, diffuse character, where it is impossible to link the negative environmental effects with acts or failure to act of certain individual actors.

(14) This Directive does not apply to cases of personal injury, to damage to private property or to any economic loss and does not affect any right regarding these types of damages.

(15) Since the prevention and remedying of environmental damage is a task directly contributing to the pursuit of the Community's environment policy, public authorities should ensure the proper implementation and enforcement of the scheme provided for by this Directive.

(16) Restoration of the environment should take place in an effective manner ensuring that the relevant restoration objectives are achieved. A common framework should be defined to that end, the proper application of which should be supervised by the competent authority.

(17) Appropriate provision should be made for those situations where several instances of environmental damage have occurred in such a manner that the competent authority cannot ensure that all the necessary remedial measures are taken at the same time. In such a case, the competent authority should be entitled to decide which instance of environmental damage is to be remedied first.

(18) According to the 'polluter-pays' principle, an operator causing environmental damage or creating an imminent threat of such damage should, in principle, bear the cost of the necessary preventive or remedial measures. In cases where a competent authority acts, itself or through a third party, in the place of an operator, that

([1]) OJ L 12, 16.1.2001, p. 1. Regulation as amended by Commission Regulation (EC) No 1496/2002 (OJ L 225, 22.8.2002, p. 13).

authority should ensure that the cost incurred by it is recovered from the operator. It is also appropriate that the operators should ultimately bear the cost of assessing environmental damage and, as the case may be, assessing an imminent threat of such damage occurring.

(19) Member States may provide for flat-rate calculation of administrative, legal, enforcement and other general costs to be recovered.

(20) An operator should not be required to bear the costs of preventive or remedial actions taken pursuant to this Directive in situations where the damage in question or imminent threat thereof is the result of certain events beyond the operator's control. Member States may allow that operators who are not at fault or negligent shall not bear the cost of remedial measures, in situations where the damage in question is the result of emissions or events explicitly authorised or where the potential for damage could not have been known when the event or emission took place.

(21) Operators should bear the costs relating to preventive measures when those measures should have been taken as a matter of course in order to comply with the legislative, regulatory and administrative provisions regulating their activities or the terms of any permit or authorisation.

(22) Member States may establish national rules covering cost allocation in cases of multiple party causation. Member States may take into account, in particular, the specific situation of users of products who might not be held responsible for environmental damage in the same conditions as those producing such products. In this case, apportionment of liability should be determined in accordance with national law.

(23) Competent authorities should be entitled to recover the cost of preventive or remedial measures from an operator within a reasonable period of time from the date on which those measures were completed.

(24) It is necessary to ensure that effective means of implementation and enforcement are available, while ensuring that the legitimate interests of the relevant operators and other interested parties are adequately safeguarded. Competent authorities should be in charge of specific tasks entailing appropriate administrative discretion, namely the duty to assess the significance of the damage and to determine which remedial measures should be taken.

(25) Persons adversely affected or likely to be adversely affected by environmental damage should be entitled to ask the competent authority to take action. Environmental protection is, however, a diffuse interest on behalf of which individuals will not always act or will not be in a position to act. Non-governmental organisations promoting environmental protection should therefore also be given the opportunity to properly contribute to the effective implementation of this Directive.

(26) The relevant natural or legal persons concerned should have access to procedures for the review of the competent authority's decisions, acts or failure to act.

(27) Member States should take measures to encourage the use by operators of any appropriate insurance or other forms of financial security and the development of financial security instruments and markets in order to provide effective cover for financial obligations under this Directive.

(28) Where environmental damage affects or is likely to affect several Member States, those Member States should cooperate with a view to ensuring proper and effective preventive or remedial action in respect of any environmental damage. Member States may seek to recover the costs for preventive or remedial actions.

(29) This Directive should not prevent Member States from maintaining or enacting more stringent provisions in relation to the prevention and remedying of environmental damage; nor should it prevent the adoption by Member States of appropriate measures in relation to situations where double recovery of costs could occur as a result of concurrent action by a competent authority under this Directive and by a person whose property is affected by the environmental damage.

(30) Damage caused before the expiry of the deadline for implementation of this Directive should not be covered by its provisions.

(31) Member States should report to the Commission on the experience gained in the application of this Directive so as to enable the Commission to consider, taking into account the impact on sustainable development and future risks to the environment, whether any review of this Directive is appropriate,

HAVE ADOPTED THIS DIRECTIVE:

Article 1

Subject matter

The purpose of this Directive is to establish a framework of environmental liability based on the 'polluter-pays' principle, to prevent and remedy environmental damage.

Article 2

Definitions

For the purpose of this Directive the following definitions shall apply:

1. 'environmental damage' means:

   (a) damage to protected species and natural habitats, which is any damage that has significant adverse effects on reaching or maintaining the favourable conservation status of such habitats or species. The significance of such effects is to be assessed with reference to the baseline condition, taking account of the criteria set out in Annex I;

   Damage to protected species and natural habitats does not include previously identified adverse effects which result from an act by an operator which was expressly authorised by the relevant authorities in accordance with provisions implementing Article 6(3) and (4) or Article 16 of Directive 92/43/EEC or Article 9 of Directive 79/409/EEC or, in the case of habitats and species not covered by Community law, in accordance with equivalent provisions of national law on nature conservation.

   (b) water damage, which is any damage that significantly adversely affects the ecological, chemical and/or quantitative status and/or ecological potential, as defined in Directive 2000/60/EC, of the waters concerned, with the exception of adverse effects where Article 4(7) of that Directive applies;

   (c) land damage, which is any land contamination that creates a significant risk of human health being adversely affected as a result of the direct or indirect introduction, in, on or under land, of substances, preparations, organisms or micro-organisms;

2. 'damage' means a measurable adverse change in a natural resource or measurable impairment of a natural resource service which may occur directly or indirectly;

3. ' protected species and natural habitats' means:

   (a) the species mentioned in Article 4(2) of Directive 79/409/EEC or listed in Annex I thereto or listed in Annexes II and IV to Directive 92/43/EEC;

   (b) the habitats of species mentioned in Article 4(2) of Directive 79/409/EEC or listed in Annex I thereto or listed in Annex II to Directive 92/43/EEC, and the natural habitats listed in Annex I to Directive 92/43/EEC and the breeding sites or resting places of the species listed in Annex IV to Directive 92/43/EEC; and

   (c) where a Member State so determines, any habitat or species, not listed in those Annexes which the Member State designates for equivalent purposes as those laid down in these two Directives;

4. 'conservation status' means:

   (a) in respect of a natural habitat, the sum of the influences acting on a natural habitat and its typical species that may affect its long-term natural distribution, structure and functions as well as the long-term survival of its typical species within, as the case may be, the European territory of the Member States to which the Treaty applies or the territory of a Member State or the natural range of that habitat;

   The conservation status of a natural habitat will be taken as 'favourable' when:

   — its natural range and areas it covers within that range are stable or increasing,

   — the specific structure and functions which are necessary for its long-term maintenance exist and are likely to continue to exist for the foreseeable future, and

   — the conservation status of its typical species is favourable, as defined in (b);

   (b) in respect of a species, the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations within, as the case may be, the European territory of the Member States to which the Treaty applies or the territory of a Member State or the natural range of that species;

The conservation status of a species will be taken as 'favourable' when:

— population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats,

— the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and

— there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis;

5. 'waters' mean all waters covered by Directive 2000/60/EC;

6. 'operator' means any natural or legal, private or public person who operates or controls the occupational activity or, where this is provided for in national legislation, to whom decisive economic power over the technical functioning of such an activity has been delegated, including the holder of a permit or authorisation for such an activity or the person registering or notifying such an activity;

7. 'occupational activity' means any activity carried out in the course of an economic activity, a business or an undertaking, irrespectively of its private or public, profit or non-profit character;

8. 'emission' means the release in the environment, as a result of human activities, of substances, preparations, organisms or micro-organisms;

9. 'imminent threat of damage' means a sufficient likelihood that environmental damage will occur in the near future;

10. 'preventive measures' means any measures taken in response to an event, act or omission that has created an imminent threat of environmental damage, with a view to preventing or minimising that damage;

11. 'remedial measures' means any action, or combination of actions, including mitigating or interim measures to restore, rehabilitate or replace damaged natural resources and/or impaired services, or to provide an equivalent alternative to those resources or services as foreseen in Annex II;

12. 'natural resource' means protected species and natural habitats, water and land;

13. 'services' and 'natural resources services' mean the functions performed by a natural resource for the benefit of another natural resource or the public;

14. 'baseline condition' means the condition at the time of the damage of the natural resources and services that would have existed had the environmental damage not occurred, estimated on the basis of the best information available;

15. 'recovery', including 'natural recovery', means, in the case of water, protected species and natural habitats the return of damaged natural resources and/or impaired services to baseline condition and in the case of land damage, the elimination of any significant risk of adversely affecting human health;

16. 'costs' means costs which are justified by the need to ensure the proper and effective implementation of this Directive including the costs of assessing environmental damage, an imminent threat of such damage, alternatives for action as well as the administrative, legal, and enforcement costs, the costs of data collection and other general costs, monitoring and supervision costs.

Article 3

Scope

1. This Directive shall apply to:

(a) environmental damage caused by any of the occupational activities listed in Annex III, and to any imminent threat of such damage occurring by reason of any of those activities;

(b) damage to protected species and natural habitats caused by any occupational activities other than those listed in Annex III, and to any imminent threat of such damage occurring by reason of any of those activities, whenever the operator has been at fault or negligent.

2. This Directive shall apply without prejudice to more stringent Community legislation regulating the operation of any of the activities falling within the scope of this Directive and without prejudice to Community legislation containing rules on conflicts of jurisdiction.

3. Without prejudice to relevant national legislation, this Directive shall not give private parties a right of compensation as a consequence of environmental damage or of an imminent threat of such damage.

Article 4

Exceptions

1. This Directive shall not cover environmental damage or an imminent threat of such damage caused by:

(a) an act of armed conflict, hostilities, civil war or insurrection;

(b) a natural phenomenon of exceptional, inevitable and irresistible character.

2. This Directive shall not apply to environmental damage or to any imminent threat of such damage arising from an incident in respect of which liability or compensation falls within the scope of any of the International Conventions listed in Annex IV, including any future amendments thereof, which is in force in the Member State concerned.

3. This Directive shall be without prejudice to the right of the operator to limit his liability in accordance with national legislation implementing the Convention on Limitation of Liability for Maritime Claims (LLMC), 1976, including any future amendment to the Convention, or the Strasbourg Convention on Limitation of Liability in Inland Navigation (CLNI), 1988, including any future amendment to the Convention.

4. This Directive shall not apply to such nuclear risks or environmental damage or imminent threat of such damage as may be caused by the activities covered by the Treaty establishing the European Atomic Energy Community or caused by an incident or activity in respect of which liability or compensation falls within the scope of any of the international instruments listed in Annex V, including any future amendments thereof.

5. This Directive shall only apply to environmental damage or to an imminent threat of such damage caused by pollution of a diffuse character, where it is possible to establish a causal link between the damage and the activities of individual operators.

6. This Directive shall not apply to activities the main purpose of which is to serve national defence or international security nor to activities the sole purpose of which is to protect from natural disasters.

Article 5

Preventive action

1. Where environmental damage has not yet occurred but there is an imminent threat of such damage occurring, the operator shall, without delay, take the necessary preventive measures.

2. Member States shall provide that, where appropriate, and in any case whenever an imminent threat of environmental damage is not dispelled despite the preventive measures taken by the operator, operators are to inform the competent authority of all relevant aspects of the situation, as soon as possible.

3. The competent authority may, at any time:

(a) require the operator to provide information on any imminent threat of environmental damage or in suspected cases of such an imminent threat;

(b) require the operator to take the necessary preventive measures;

(c) give instructions to the operator to be followed on the necessary preventive measures to be taken; or

(d) itself take the necessary preventive measures.

4. The competent authority shall require that the preventive measures are taken by the operator. If the operator fails to comply with the obligations laid down in paragraph 1 or 3(b) or (c), cannot be identified or is not required to bear the costs under this Directive, the competent authority may take these measures itself.

Article 6

Remedial action

1. Where environmental damage has occurred the operator shall, without delay, inform the competent authority of all relevant aspects of the situation and take:

(a) all practicable steps to immediately control, contain, remove or otherwise manage the relevant contaminants and/or any other damage factors in order to limit or to prevent further environmental damage and adverse effects on human health or further impairment of services and

(b) the necessary remedial measures, in accordance with Article 7.

2. The competent authority may, at any time:

(a) require the operator to provide supplementary information on any damage that has occurred;

(b) take, require the operator to take or give instructions to the operator concerning, all practicable steps to immediately control, contain, remove or otherwise manage the relevant contaminants and/or any other damage factors in order to limit or to prevent further environmental damage and adverse effect on human health, or further impairment of services;

(c) require the operator to take the necessary remedial measures;

(d) give instructions to the operator to be followed on the necessary remedial measures to be taken; or

(e) itself take the necessary remedial measures.

3. The competent authority shall require that the remedial measures are taken by the operator. If the operator fails to comply with the obligations laid down in paragraph 1 or 2(b), (c) or (d), cannot be identified or is not required to bear the costs under this Directive, the competent authority may take these measures itself, as a means of last resort.

Article 7

Determination of remedial measures

1. Operators shall identify, in accordance with Annex II, potential remedial measures and submit them to the competent authority for its approval, unless the competent authority has taken action under Article 6(2)(e) and (3).

2. The competent authority shall decide which remedial measures shall be implemented in accordance with Annex II, and with the cooperation of the relevant operator, as required.

3. Where several instances of environmental damage have occurred in such a manner that the competent authority cannot ensure that the necessary remedial measures are taken at the same time, the competent authority shall be entitled to decide which instance of environmental damage must be remedied first.

In making that decision, the competent authority shall have regard, inter alia, to the nature, extent and gravity of the various instances of environmental damage concerned, and to the possibility of natural recovery. Risks to human health shall also be taken into account.

4. The competent authority shall invite the persons referred to in Article 12(1) and in any case the persons on whose land remedial measures would be carried out to submit their observations and shall take them into account.

Article 8

Prevention and remediation costs

1. The operator shall bear the costs for the preventive and remedial actions taken pursuant to this Directive.

2. Subject to paragraphs 3 and 4, the competent authority shall recover, inter alia, via security over property or other appropriate guarantees from the operator who has caused the damage or the imminent threat of damage, the costs it has incurred in relation to the preventive or remedial actions taken under this Directive.

However, the competent authority may decide not to recover the full costs where the expenditure required to do so would be greater than the recoverable sum or where the operator cannot be identified.

3. An operator shall not be required to bear the cost of preventive or remedial actions taken pursuant to this Directive when he can prove that the environmental damage or imminent threat of such damage:

(a) was caused by a third party and occured despite the fact that appropriate safety measures were in place; or

(b) resulted from compliance with a compulsory order or instruction emanating from a public authority other than an order or instruction consequent upon an emission or incident caused by the operator's own activities.

In such cases Member States shall take the appropriate measures to enable the operator to recover the costs incurred.

4. The Member States may allow the operator not to bear the cost of remedial actions taken pursuant to this Directive where he demonstrates that he was not at fault or negligent and that the environmental damage was caused by:

(a) an emission or event expressly authorised by, and fully in accordance with the conditions of, an authorisation conferred by or given under applicable national laws and regulations which implement those legislative measures adopted by the Community specified in Annex III, as applied at the date of the emission or event;

(b) an emission or activity or any manner of using a product in the course of an activity which the operator demonstrates was not considered likely to cause environmental damage according to the state of scientific and technical knowledge at the time when the emission was released or the activity took place.

5. Measures taken by the competent authority in pursuance of Article 5(3) and (4) and Article 6(2) and (3) shall be without prejudice to the liability of the relevant operator under this Directive and without prejudice to Articles 87 and 88 of the Treaty.

Article 9

Cost allocation in cases of multiple party causation

This Directive is without prejudice to any provisions of national regulations concerning cost allocation in cases of multiple party causation especially concerning the apportionment of liability between the producer and the user of a product.

Article 10

Limitation period for recovery of costs

The competent authority shall be entitled to initiate cost recovery proceedings against the operator, or if appropriate, a third party who has caused the damage or the imminent threat of damage in relation to any measures taken in pursuance of this Directive within five years from the date on which those measures have been completed or the liable operator, or third party, has been identified, whichever is the later.

Article 11

Competent authority

1. Member States shall designate the competent authority(ies) responsible for fulfilling the duties provided for in this Directive.

2. The duty to establish which operator has caused the damage or the imminent threat of damage, to assess the significance of the damage and to determine which remedial measures should be taken with reference to Annex II shall rest with the competent authority. To that effect, the competent authority shall be entitled to require the relevant operator to carry out his own assessment and to supply any information and data necessary.

3. Member States shall ensure that the competent authority may empower or require third parties to carry out the necessary preventive or remedial measures.

4. Any decision taken pursuant to this Directive which imposes preventive or remedial measures shall state the exact grounds on which it is based. Such decision shall be notified forthwith to the operator concerned, who shall at the same time be informed of the legal remedies available to him under the laws in force in the Member State concerned and of the time-limits to which such remedies are subject.

Article 12

Request for action

1. Natural or legal persons:

(a) affected or likely to be affected by environmental damage or

(b) having a sufficient interest in environmental decision making relating to the damage or, alternatively,

(c) alleging the impairment of a right, where administrative procedural law of a Member State requires this as a precondition,

shall be entitled to submit to the competent authority any observations relating to instances of environmental damage or an imminent threat of such damage of which they are aware and shall be entitled to request the competent authority to take action under this Directive.

What constitutes a 'sufficient interest' and 'impairment of a right' shall be determined by the Member States.

To this end, the interest of any non-governmental organisation promoting environmental protection and meeting any requirements under national law shall be deemed sufficient for the purpose of subparagraph (b). Such organisations shall also be deemed to have rights capable of being impaired for the purpose of subparagraph (c).

2. The request for action shall be accompanied by the relevant information and data supporting the observations submitted in relation to the environmental damage in question.

3. Where the request for action and the accompanying observations show in a plausible manner that environmental damage exists, the competent authority shall consider any such observations and requests for action. In such circumstances the competent authority shall give the relevant operator an opportunity to make his views known with respect to the request for action and the accompanying observations.

4. The competent authority shall, as soon as possible and in any case in accordance with the relevant provisions of national law, inform the persons referred to in paragraph 1, which submitted observations to the authority, of its decision to

accede to or refuse the request for action and shall provide the reasons for it.

5. Member States may decide not to apply paragraphs 1 and 4 to cases of imminent threat of damage.

Article 13

Review procedures

1. The persons referred to in Article 12(1) shall have access to a court or other independent and impartial public body competent to review the procedural and substantive legality of the decisions, acts or failure to act of the competent authority under this Directive.

2. This Directive shall be without prejudice to any provisions of national law which regulate access to justice and those which require that administrative review procedures be exhausted prior to recourse to judicial proceedings.

Article 14

Financial security

1. Member States shall take measures to encourage the development of financial security instruments and markets by the appropriate economic and financial operators, including financial mechanisms in case of insolvency, with the aim of enabling operators to use financial guarantees to cover their responsibilities under this Directive.

2. The Commission, before 30 April 2010 shall present a report on the effectiveness of the Directive in terms of actual remediation of environmental damages, on the availability at reasonable costs and on conditions of insurance and other types of financial security for the activities covered by Annex III. The report shall also consider in relation to financial security the following aspects: a gradual approach, a ceiling for the financial guarantee and the exclusion of low-risk activities. In the light of that report, and of an extended impact assessment, including a cost-benefit analysis, the Commission shall, if appropriate, submit proposals for a system of harmonised mandatory financial security.

Article 15

Cooperation between Member States

1. Where environmental damage affects or is likely to affect several Member States, those Member States shall cooperate, including through the appropriate exchange of information, with a view to ensuring that preventive action and, where necessary, remedial action is taken in respect of any such environmental damage.

2. Where environmental damage has occurred, the Member State in whose territory the damage originates shall provide sufficient information to the potentially affected Member States.

3. Where a Member State identifies damage within its borders which has not been caused within them it may report the issue to the Commission and any other Member State concerned; it may make recommendations for the adoption of preventive or remedial measures and it may seek, in accordance with this Directive, to recover the costs it has incurred in relation to the adoption of preventive or remedial measures.

Article 16

Relationship with national law

1. This Directive shall not prevent Member States from maintaining or adopting more stringent provisions in relation to the prevention and remedying of environmental damage, including the identification of additional activities to be subject to the prevention and remediation requirements of this Directive and the identification of additional responsible parties.

2. This Directive shall not prevent Member States from adopting appropriate measures, such as the prohibition of double recovery of costs, in relation to situations where double recovery could occur as a result of concurrent action by a competent authority under this Directive and by a person whose property is affected by environmental damage.

Article 17

Temporal application

This Directive shall not apply to:

— damage caused by an emission, event or incident that took place before the date referred to in Article 19(1),

— damage caused by an emission, event or incident which takes place subsequent to the date referred to in Article 19(1) when it derives from a specific activity that took place and finished before the said date,

— damage, if more than 30 years have passed since the emission, event or incident, resulting in the damage, occurred.

Article 18

Reports and review

1. Member States shall report to the Commission on the experience gained in the application of this Directive by 30 April 2013 at the latest. The reports shall include the information and data set out in Annex VI.

2. On that basis, the Commission shall submit a report to the European Parliament and to the Council before 30 April 2014, which shall include any appropriate proposals for amendment.

3. The report, referred to in paragraph 2, shall include a review of:

(a) the application of:

— Article 4(2) and (4) in relation to the exclusion of pollution covered by the international instruments listed in Annexes IV and V from the scope of this Directive, and

— Article 4(3) in relation to the right of an operator to limit his liability in accordance with the international conventions referred to in Article 4(3).

The Commission shall take into accountexperience gained within the relevant international fora, such as the IMO and Euratom and the relevant international agreements, as well as the extent to which these instruments have entered into force and/or have been implemented by Member States and/or have been modified, taking account of all relevant instances of environmental damage resulting from such activities and the remedial action taken and the differences between the liability levels in Member States, and considering the relationship between shipowners' liability and oil receivers' contributions, having due regard to any relevant study undertaken by the International Oil Pollution Compensation Funds.

b) the application of this Directive to environmental damage caused by genetically modified organisms (GMOs), particularly in the light of experience gained within relevant international fora and Conventions, such as the Convention on Biological Diversity and the Cartagena Protocol on Biosafety, as well as the results of any incidents of environmental damage caused by GMOs;

c) the application of this Directive in relation to protected species and natural habitats;

d) the instruments that may be eligible for incorporation into Annexes III, IV and V.

Article 19

Implementation

1. Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by 30 April 2007. They shall forthwith inform the Commission thereof.

When Member States adopt those measures, they shall contain a reference to this Directive or shall be accompanied by such a reference on the occasion of their official publication. The methods of making such reference shall be laid down by Member States.

2. Member States shall communicate to the Commission the text of the main provisions of national law which they adopt in the field covered by this Directive together with a table showing how the provisions of this Directive correspond to the national provisions adopted.

Article 20

Entry into force

This Directive shall enter into force on the day of its publication in the *Official Journal of the European Union*.

Article 21

Addressees

This Directive is addressed to the Member States.

Done at Strasbourg, 21 April 2004.

For the European Parliament	*For the Council*
The President	*The President*
P. COX	D. ROCHE

ANNEX I

CRITERIA REFERRED TO IN ARTICLE 2(1)(A)

The significance of any damage that has adverse effects on reaching or maintaining the favourable conservation status of habitats or species has to be assessed by reference to the conservation status at the time of the damage, the services provided by the amenities they produce and their capacity for natural regeneration. Significant adverse changes to the baseline condition should be determined by means of measurable data such as:

— the number of individuals, their density or the area covered,

— the role of the particular individuals or of the damaged area in relation to the species or to the habitat conservation, the rarity of the species or habitat (assessed at local, regional and higher level including at Community level),

— the species' capacity for propagation (according to the dynamics specific to that species or to that population), its viability or the habitat's capacity for natural regeneration (according to the dynamics specific to its characteristic species or to their populations),

— the species' or habitat's capacity, after damage has occurred, to recover within a short time, without any intervention other than increased protection measures, to a condition which leads, solely by virtue of the dynamics of the species or habitat, to a condition deemed equivalent or superior to the baseline condition.

Damage with a proven effect on human health must be classified as significant damage.

The following does not have to be classified as significant damage:

— negative variations that are smaller than natural fluctuations regarded as normal for the species or habitat in question,

— negative variations due to natural causes or resulting from intervention relating to the normal management of sites, as defined in habitat records or target documents or as carried on previously by owners or operators,

— damage to species or habitats for which it is established that they will recover, within a short time and without intervention, either to the baseline condition or to a condition which leads, solely by virtue of the dynamics of the species or habitat, to a condition deemed equivalent or superior to the baseline condition.

ANNEX II

REMEDYING OF ENVIRONMENTAL DAMAGE

This Annex sets out a common framework to be followed in order to choose the most appropriate measures to ensure the remedying of environmental damage.

1. Remediation of damage to water or protected species or natural habitats

Remedying of environmental damage, in relation to water or protected species or natural habitats, is achieved through the restoration of the environment to its baseline condition by way of primary, complementary and compensatory remediation, where:

(a) 'Primary' remediation is any remedial measure which returns the damaged natural resources and/or impaired services to, or towards, baseline condition;

(b) 'Complementary' remediation is any remedial measure taken in relation to natural resources and/or services to compensate for the fact that primary remediation does not result in fully restoring the damaged natural resources and/or services;

(c) 'Compensatory' remediation is any action taken to compensate for interim losses of natural resources and/or services that occur from the date of damage occurring until primary remediation has achieved its full effect;

(d) 'interim losses' means losses which result from the fact that the damaged natural resources and/or services are not able to perform their ecological functions or provide services to other natural resources or to the public until the primary or complementary measures have taken effect. It does not consist of financial compensation to members of the public.

Where primary remediation does not result in the restoration of the environment to its baseline condition, then complementary remediation will be undertaken. In addition, compensatory remediation will be undertaken to compensate for the interim losses.

Remedying of environmental damage, in terms of damage to water or protected species or natural habitats, also implies that any significant risk of human health being adversely affected be removed.

1.1. *Remediation objectives*

Purpose of primary remediation

1.1.1. The purpose of primary remediation is to restore the damaged natural resources and/or services to, or towards, baseline condition.

Purpose of complementary remediation

1.1.2. Where the damaged natural resources and/or services do not return to their baseline condition, then complementary remediation will be undertaken. The purpose of complementary remediation is to provide a similar level of natural resources and/or services, including, as appropriate, at an alternative site, as would have been provided if the damaged site had been returned to its baseline condition. Where possible and appropriate the alternative site should be geographically linked to the damaged site, taking into account the interests of the affected population.

Purpose of compensatory remediation

1.1.3. Compensatory remediation shall be undertaken to compensate for the interim loss of natural resources and services pending recovery. This compensation consists of additional improvements to protected natural habitats and species or water at either the damaged site or at an alternative site. It does not consist of financial compensation to members of the public.

1.2. *Identification of remedial measures*

Identification of primary remedial measures

1.2.1. Options comprised of actions to directly restore the natural resources and services towards baseline condition on an accelerated time frame, or through natural recovery, shall be considered.

Identification of complementary and compensatory remedial measures

1.2.2. When determining the scale of complementary and compensatory remedial measures, the use of resource-to-resource or service-to-service equivalence approaches shall be considered first. Under these approaches, actions that provide natural resources and/or services of the same type, quality and quantity as those damaged shall be considered first. Where this is not possible, then alternative natural resources and/or services shall be provided. For example, a reduction in quality could be offset by an increase in the quantity of remedial measures.

1.2.3. If it is not possible to use the first choice resource-to-resource or service-to-service equivalence approaches, then alternative valuation techniques shall be used. The competent authority may prescribe the method, for example monetary valuation, to determine the extent of the necessary complementary and compensatory remedial measures. If valuation of the lost resources and/or services is practicable, but valuation of the replacement natural resources and/or services cannot be performed within a reasonable time-frame or at a reasonable cost, then the competent authority may choose remedial measures whose cost is equivalent to the estimated monetary value of the lost natural resources and/or services.

The complementary and compensatory remedial measures should be so designed that they provide for additional natural resources and/or services to reflect time preferences and the time profile of the remedial measures. For example, the longer the period of time before the baseline condition is reached, the greater the amount of compensatory remedial measures that will be undertaken (other things being equal).

1.3. *Choice of the remedial options*

1.3.1. The reasonable remedial options should be evaluated, using best available technologies, based on the following criteria:

— The effect of each option on public health and safety,

— The cost of implementing the option,

— The likelihood of success of each option,

— The extent to which each option will prevent future damage, and avoid collateral damage as a result of implementing the option,

— The extent to which each option benefits to each component of the natural resource and/or service,

— The extent to which each option takes account of relevant social, economic and cultural concerns and other relevant factors specific to the locality,

— The length of time it will take for the restoration of the environmental damage to be effective,

— The extent to which each option achieves the restoration of site of the environmental damage,

— The geographical linkage to the damaged site.

1.3.2. When evaluating the different identified remedial options, primary remedial measures that do not fully restore the damaged water or protected species or natural habitat to baseline or that restore it more slowly can be chosen. This decision can be taken only if the natural resources and/or services foregone at the primary site as a result of the decision are compensated for by increasing complementary or compensatory actions to provide a similar level of natural resources and/or services as were foregone. This will be the case, for example, when the equivalent natural resources and/or services could be provided elsewhere at a lower cost. These additional remedial measures shall be determined in accordance with the rules set out in section 1.2.2.

1.3.3. Notwithstanding the rules set out in section 1.3.2. and in accordance with Article 7(3), the competent authority is entitled to decide that no further remedial measures should be taken if:

(a) the remedial measures already taken secure that there is no longer any significant risk of adversely affecting human health, water or protected species and natural habitats, and

(b) the cost of the remedial measures that should be taken to reach baseline condition or similar level would be disproportionate to the environmental benefits to be obtained.

2. **Remediation of land damage**

The necessary measures shall be taken to ensure, as a minimum, that the relevant contaminants are removed, controlled, contained or diminished so that the contaminated land, taking account of its current use or approved future use at the time of the damage, no longer poses any significant risk of adversely affecting human health. The presence of such risks shall be assessed through risk-assessment procedures taking into account the characteristic and function of the soil, the type and concentration of the harmful substances, preparations, organisms or micro-organisms, their risk and the possibility of their dispersion. Use shall be ascertained on the basis of the land use regulations, or other relevant regulations, in force, if any, when the damage occurred.

If the use of the land is changed, all necessary measures shall be taken to prevent any adverse effects on human health.

If land use regulations, or other relevant regulations, are lacking, the nature of the relevant area where the damage occurred, taking into account its expected development, shall determine the use of the specific area.

A natural recovery option, that is to say an option in which no direct human intervention in the recovery process would be taken, shall be considered.

ANNEX III

ACTIVITIES REFERRED TO IN ARTICLE 3(1)

1. The operation of installations subject to permit in pursuance of Council Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control [1]. That means all activities listed in Annex I of Directive 96/61/EC with the exception of installations or parts of installations used for research, development and testing of new products and processes.

2. Waste management operations, including the collection, transport, recovery and disposal of waste and hazardous waste, including the supervision of such operations and after-care of disposal sites, subject to permit or registration in pursuance of Council Directive 75/442/EEC of 15 July 1975 on waste [2] and Council Directive 91/689/EEC of 12 December 1991 on hazardous waste [3].

   Those operations include, inter alia, the operation of landfill sites under Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste [4] and the operation of incineration plants under Directive 2000/76/EC of the European Parliament and of the Council of 4 December 2000 on the incineration of waste [5].

   For the purpose of this Directive, Member States may decide that those operations shall not include the spreading of sewage sludge from urban waste water treatment plants, treated to an approved standard, for agricultural purposes.

3. All discharges into the inland surface water, which require prior authorisation in pursuance of Council Directive 76/464/EEC of 4 May 1976 on pollution caused by certain dangerous substances, discharged into the aquatic environment of the Community [6].

4. All discharges of substances into groundwater which require prior authorisation in pursuance of Council Directive 80/68/EEC of 17 December 1979 on the protection of groundwater against pollution caused by certain dangerous substances [7].

5. The discharge or injection of pollutants into surface water or groundwater which require a permit, authorisation or registration in pursuance of Directive 2000/60/EC.

6. Water abstraction and impoundment of water subject to prior authorisation in pursuance of Directive 2000/60/EC.

7. Manufacture, use, storage, processing, filling, release into the environment and onsite transport of

   (a) dangerous substances as defined in Article 2(2) of Council Directive 67/548/EEC of 27 June 1967 on the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous substances [8];

   (b) dangerous preparations as defined in Article 2(2) of Directive 1999/45/EC of the European Parliament and of the Council of 31 May 1999 concerning the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations [9];

   (c) plant protection products as defined in Article2(1) of Council Directive 91/414/EEC of 15 July 1991 concerning the placing of plant protection products on the market [10];

   (d) biocidal products as defined in Article 2(1)(a) of Directive 98/8/EC of the European Parliament and of the Council of 16 February 1998 concerning the placing of biocidal products on the market [11].

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(1) OJ L 257, 10.10.1996, p. 26. Directive as last amended by Regulation (EC) No 1882/2003.
(2) OJ L 194, 25.7.1975, p. 39. Directive as last amended by Regulation (EC) No 1882/2003.
(3) OJ L 377, 31.12.1991, p. 20. Directive as amended by Directive 94/31/EC (OJ L 168, 2.7.1994, p. 28).
(4) OJ L 182, 16.7.1999, p. 1 Directive as amended by Regulation (EC) No 1882/2003.
(5) OJ L 332, 28.12.2000, p. 91.
(6) OJ L 129, 18.5.1976, p. 23. Directive as last amended by Directive 2000/60/EC.
(7) OJ L 20, 26.1.1980, p. 43. Directive as amended by Directive 91/692/EEC (OJ L 377, 31.12.1991, p. 48).
(8) OJ 196, 16.8.1967, p. 1. Directive as last amended by Regulation (EC) No 807/2003.
(9) OJ L 200, 30.7.1999, p. 1. Directive as last amended by Regulation (EC) No 1882/2003.
(10) OJ L 230, 19.8.1991, p. 1. Directive as last amended by Regulation (EC) No 806/2003 (OJ L 122, 16.5.2003, p. 1).
(11) OJ L 123, 24.4.1998, p. 1. Directive as amended by Regulation (EC) No 1882/2003.

8. Transport by road, rail, inland waterways, sea or air of dangerous goods or polluting goods as defined either in Annex A to Council Directive 94/55/EC of 21 November 1994 on the approximation of the laws of the Member States with regard to the transport of dangerous goods by road [1] or in the Annex to Council Directive 96/49/EC of 23 July 1996 on the approximation of the laws of the Member States with regard to the transport of dangerous goods by rail [2] or as defined in Council Directive 93/75/EEC of 13 September 1993 concerning minimum requirements for vessels bound for or leaving Community ports and carrying dangerous or polluting goods [3].

9. The operation of installations subject to authorisation in pursuance of Council Directive 84/360/EEC of 28 June 1984 on the combating of air pollution from industrial plants [4] in relation to the release into air of any of the polluting substances covered by the aforementioned Directive.

10. Any contained use, including transport, involving genetically modified micro-organisms as defined by Council Directive 90/219/EEC of 23 April 1990 on the contained use of genetically modified micro-organisms [5].

11. Any deliberate release into the environment, transport and placing on the market of genetically modified organisms as defined by Directive 2001/18/EC of the European Parliament and of the Council [6].

12. Transboundary shipment of waste within, into or out of the European Union, requiring an authorisation or prohibited in the meaning of Council Regulation (EEC) No 259/93 of 1 February 1993 on the supervision and control of shipments of waste within, into and out of the European Community [7].

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(1) OJ L 319, 12.12.1994, p. 7. Directive as last amended by Commission Directive 2003/28/EC (OJ L 90, 8.4.2003, p. 45).
(2) OJ L 235, 17.9.1996, p. 25. Directive as last amended by Commission Directive 2003/29/EC (OJ L 90, 8.4.2003, p. 47).
(3) OJ L 247, 5.10.1993, p. 19. Directive as last amended by Directive 2002/84/EC of the European Parliament and of the Council (OJ L 324, 29.11.2002, p. 53).
(4) OJ L 188, 16.7.1984, p. 20. Directive as amended by Directive 91/692/EEC (OJ L 377, 31.12.1991, p. 48).
(5) OJ L 117, 8.5.1990, p. 1. Directive as last amended by Regulation (EC) No 1882/2003.
(6) OJ L 106, 17.4.2001, p. 1. Directive as last amended by Regulation (EC) No 1830/2003 (OJ L 268, 18.10.2003, p. 24).
(7) OJ L 30, 6.2.1993, p. 1. Regulation as last amended by Commission Regulation (EC) No 2557/2001 (OJ L 349, 31.12.2001, p. 1).

ANNEX IV

INTERNATIONAL CONVENTIONS REFERRED TO IN ARTICLE 4(2)

(a) the International Convention of 27 November 1992 on Civil Liability for Oil Pollution Damage;

(b) the International Convention of 27 November 1992 on the Establishment of an International Fund for Compensation for Oil Pollution Damage;

(c) the International Convention of 23 March 2001 on Civil Liability for Bunker Oil Pollution Damage;

(d) the International Convention of 3 May 1996 on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea;

(e) the Convention of 10 October 1989 on Civil Liability for Damage Caused during Carriage of Dangerous Goods by Road, Rail and Inland Navigation Vessels.

ANNEX V

INTERNATIONAL INSTRUMENTS REFERRED TO IN ARTICLE 4(4)

(a) the Paris Convention of 29 July 1960 on Third Party Liability in the Field of Nuclear Energy and the Brussels Supplementary Convention of 31 January 1963;

(b) the Vienna Convention of 21 May 1963 on Civil Liability for Nuclear Damage;

(c) the Convention of 12 September 1997 on Supplementary Compensation for Nuclear Damage;

(d) the Joint Protocol of 21 September 1988 relating to the Application of the Vienna Convention and the Paris Convention;

(e) the Brussels Convention of 17 December 1971 relating to Civil Liability in the Field of Maritime Carriage of Nuclear Material.

ANNEX VI

INFORMATION AND DATA REFERRED TO IN ARTICLE 18(1)

The reports referred to in Article 18(1) shall include a list of instances of environmental damage and instances of liability under this Directive, with the following information and data for each instance:

1. Type of environmental damage, date of occurrence and/or discovery of the damage and date on which proceedings were initiated under this Directive.

2. Activity classification code of the liable legal person(s) ([1]).

3. Whether there has been resort to judicial review proceedings either by liable parties or qualified entities. (The type of claimants and the outcome of proceedings shall be specified.)

4. Outcome of the remediation process.

5. Date of closure of proceedings.

Member States may include in their reports any other information and data they deem useful to allow a proper assessment of the functioning of this Directive, for example:

1. Costs incurred with remediation and prevention measures, as defined in this Directive:

   — paid for directly by liable parties, when this information is available;

   — recovered ex post facto from liable parties;

   — unrecovered from liable parties. (Reasons for non-recovery should be specified.)

2. Results of the actions to promote and the implementation of the financial security instruments used in accordance with this Directive.

3. An assessment of the additional administrative costs incurred annually by the public administration in setting up and operating the administrative structures needed to implement and enforce this Directive.

([1]) The NACE code can be used (Council Regulation (EEC) No 3037/90 of 9 October 1990 on the statistical classification of economic activities in the European Community (OJ L 293, 24.10.1990, p. 1).

Commission declaration on Artide 14(2) — Environmental liability Directive

The Commission takes note of article 14(2). In accordance with this article, the Commission will present a report, six years after the entry into force of the Directive, covering, *inter alia*, the availability at reasonable costs and conditions of insurance and other types of financial security. The report will in particular take into account the development by the market forces of appropriate financial security products in relation to the aspects referred to. It will also consider a gradual approach according to the type of damage and the nature of the risks. In the light of the report, the Commission will, if appropriate, submit as soon as possible proposals. The Commission will carry out an impact assessment, extended to the economic, social and environmental aspects, in accordance with the relevant existing rules and in particular the inter-institutional agreement on Better Law-Making and its Communication on Impact Assessment [COM(2002) 276 final].