REVUE BELGE DE DROIT INTERNATIONAL
1996/2 — Éditions BRUYLANT, Bruxelles

TRANSBOUNDARY DAMAGE TO THE ENVIRONMENT *PER SE* : REMEDIAL MEASURES AND STANDING (1)

BY

Katrien BEECKMAN

LIC. JUR. K.U.LEUVEN
DIPLÔME D'ETUDES SUPÉRIEURES IN INTERNATIONAL RELATIONS,
THE GRADUATE INSTITUTE OF INTERNATIONAL STUDIES, GENEVA
ASSISTANT,
PROGRAMME PLURI-FACULTAIRE ACTION HUMANITAIRE,
UNIVERSITY OF GENEVA

TABLE OF CONTENTS

INTRODUCTION

CHAPTER I. — REMEDIAL MEASURES WITH REGARD TO DAMAGE TO THE ENVIRONMENT *PER SE*

I. *Monetary compensation for « damage to the environment* per se *» : problems of damage assessment and of threshold determination*

A. The problem of assessing « damage to the environment *per se* »

(1) Values attributable to natural resources
* Consumptive use value
* Existence value : option, vicarious and bequest value
* Intrinsic value

(2) Methods for monetising « damage to the environment *per se* »
* Monetising damage to use value of natural resources : the market price methodology, the travel cost analysis and the hedonistic price valuation
* Monetising damage to existence and intrinsic value of natural resources : the contingent valuation methodology
* Evaluation of the available methods for monetising non-economic damage to the environment *per se* : a failure resulting in negotiation

B. Compensation for damage to the environment *per se* : the threshold problem

(1) The threshold problem in the context of inter-State responsibility

(2) The threshold problem in the context of transnational liability

(1) The author thanks Mrs. L. BOISSON DE CHAZOURNES, Professor C. DOMINICÉ and Professor E. SUY for their comments on an earlier version of her article.

II. *Non-monetary reparation of damage to the environment* per se
A. Non-monetary remedial measures : restoration and acquisition of equivalent resources
B. Restoration of damage to the environment *per se* : the preliminary problem of homeostasis and proportionality
C. Restoration of damage to the environment *per se* : the base line problem
D. The interaction between restoration and compensation for damage to the environment *per se* : resource based compensation

CHAPTER II. — *LOCUS STANDI* BEFORE JUDICIARY BODIES IN THE CASE OF DAMAGE TO THE ENVIRONMENT *PER SE*

I. *The state as a claimant for the transboundary damage to the environment* per se *before international judicial bodies*
A. Deficiency of traditional international law to govern inter-State environmental liability claims
B. Scope for *actio popularis* to govern inter-State environmental liability claims

II. *The problem of* locus standi *before judiciary bodies on the transnational scene*
A. The claimant according to the anthropological conception : the State as the legal representative of the « harmed community »
B. The claimant according to the ecocentric conception : the fiduciary as the legal representative of the environment's autonomous rights
(1) The State
(2) Environmental non-governmental organisations
(3) The individual

CONCLUSION

INTRODUCTION

« *The pollution of the river might kill the fish but not harm the fisherman and human interest offers too weak a justification for taking protective actions* » (2) *for the environment per se.*

Pollution always entails two victims being harmed in different ways : the environment itself and the individual. If we take the example of a polluted watercourse : the immediate harm is inflicted upon the water, the fauna and the flora of the watercourse. Subsequent damage can be caused to human beings. For instance, health is affected if the quality of drinking water has strongly deteriorated or professional fishing activity might suddenly decrease if the pollution affected the watercourse's fauna. It is clear that damage to the individual is the *result* of the alteration of the water,

(2) EMMENEGGER Susan and TSCHENTSCHER Axel, « Taking Nature's Rights Seriously : The Long Way to Biocentrism in Environmental Law », *Georgetown Int'L Envtl. Law Review*, vol. 6, 1994, p. 560.

fauna or flora of the watercourse. Therefore, it is consequential damage to the prior damage which was caused to the environment itself. The present article focuses on the legal problems encountered when action for reparation is undertaken on behalf of the first victim, *i.e.* the environment *per se*.

In our first Chapter we will examine to what extent the present remedial measures are adequate in a general context, whether international, transnational or national. The problem of attribution of monetary compensation for « damage to the environment *per se* » will first be taken under scrutiny (I) since it is the most common means of reparation. Non-monetary means of reparation or *restitutio in kind* are generally impossible and will be focused on afterwards (II). In the second Chapter we focus our analysis on transboundary pollution, *i.e.* pollution not only affecting the territory of the State where the polluting activity takes place but equally the environment under the territorial sovereignty of the neighbouring State(s). We will examine who can legally represent the environment when action for reparation is undertaken at the international level (I) and at the transnational level (II).

The large-scale political demonstrations organised against French Nuclear Testing in the South Pacific illustrate that the world conscience cares to conserve « a green planet ». The ultimate question to be answered is whether the current legal system protects the environment adequately. In other words, does it accomplish effective reparation for damage suffered by the environment ? Does the present liability regime have a preventive impact on the polluter ? Can the river survive if the fisherman is not harmed ? These are the questions to be answered in this paper.

Chapter I. — Remedial Measures with Regard to Damage to the Environment *per se*

I. — *Monetary compensation for « damage to the environment* per se *» : problems of damage assessment and of threshold determination*

While the concept of « damage to the individual » is clear nowadays, defining « damage to the environment *per se* » still poses legal problems. The first problem encountered while defining « damage to the environment *per se* » is that the existing international instruments do not enshrine a unique definition of « the environment ». A restrictive view only takes account of natural resources (3) and their interactions as components of the environ-

(3) This concept covers living resources, such as animals and plants and non-living ones, such as minerals, petrol, water, etc.

ment (4). A broader concept covers also the aesthetic value of the landscape and the recreational values produced by the environment (for example, a beautiful lake where one can fish for pleasure, wind-surf, swim, etc.). The broadest concept equally embraces property forming part of a cultural heritage (5). Since a consensus is lacking on the scope of the environment itself or in other words, on its exact components, it is consequently impossible to reach a general agreement on the definition of « damage to the environment *per se* » (6).

The vagueness of the concept of « damage to the environment *per se* », will create particular difficulties when monetary compensation is to be awarded as the means of legal reparation. « Damage to the environment », translated in general terms, equals the diminution or the loss in value(s) of the components of the environment. However, there exists no unanimity as to what value(s) should be attributed to the environment's components at present. The monetary sum granted as compensation for the damage incurred, will vary according to which values are recognised in the legal system concerned. Furthermore, the attribution of compensation implies that damage to the environment should be assessed or evaluated in monetary or economic terms. The problem which arises here is precisely that some of the values natural resources possess, cannot be assessed this way : the harm they suffered will then be classified as non-economic loss. Since national and international legislation still require, on a general basis, claims for compensation to be based on a quantifiable *economic* loss, this kind of damage will be left unanswered.

In the first section, we propose to analyse the problem of the assessment of damage to the environment *per se* (A). To this purpose, the different values attributable to natural resources will first be analysed (1). Secondly, we will study the methods capable of assessing the damage caused to these values and look whether they are generally satisfactory or not (2). Finally, given the fact that only harm beyond a threshold is eligible for compensation and thus legally recognised as « damage to the environment *per se* », we

(4) BARBOZA Julio, Sixth Report, § 6 ; SANDS Philippe, MACKENZIE Ruth & KHALASTCHI Ruth, *Background Paper for the UNEP Working Group on Environmental Damage, Liability and Compensation*, London, FIELD & SOAS, 1995, p. 31.

(5) See for example art. 2 (10) of the Council of Europe Convention on Civil Liability for Damage Resulting from Activities Dangerous to the Environment, 1993, *I.L.M.*, vol. 32, p. 1228 (hereafter, the Council of Europe Convention or the Lugano Convention), or the Economic Commission for Europe Convention on the Protection and Use of Transboundary Watercourses and International Lakes, Helsinki, 1992, *I.L.M.*, vol. 31, pp. 1314-1315, art. 1 (2). Barboza rejects these broad conceptions of the environment on the ground that « characteristic aspects of the landscape appear to be values rather than components of the natural environment » and that historical monuments are only « culturised » objects embodying the aesthetic 'baggage' of a given population. BARBOZA, *Eleventh Report on International Liability for Injurious Consequences Arising out of Acts not Prohibited by International Law*, I.L.C., 47th Session, 1995, A/CN.4/468, §§ 5 and 6.

(6) *Loc. cit.*

will examine in a second section whether this threshold is defined well-enough for liability purposes of compensation (B). In this context, a distinction will be made between the threshold problem in the context of inter-State responsibility (1) and the problem met at the transnational level where individuals are the main actors (2).

A. — The problem of assessing « damage to the environment *per se* »

(1) Values attributable to natural resources

We should first observe that it is only necessary to determine exactly which values should be taken into consideration for legal purposes when damage is to be compensated, thus not when restoration (7) will take place. Restoration or reparation in kind of the environment itself though, is always the primary objective of any reparation action and does not require any prior quantification of the harm. The costs incurred during the action will in this case reflect, *a posteriori*, the « damage to the environment *per se* ». Only if restoration is physically impossible, financially disproportional (at first sight) or unreasonable, will one have to resort to the award of monetary compensation. Therefore, it is important to underline that the need to reach a consensus on the different values the components of the environment possess, is mostly a secondary problem.

* The consumptive use value

One can look at the environment from an economic perspective and only take into account its consumptive use value. Resource valuation will then be a pure reflection of nature's monetary value or market price. For example, the value of a fish will equal the price at which it is sold on the market. Inspired by utilitarianism (8), this « market price methodology » aims at capturing nature's utility at the lowest costs, but ignores the reality that natural resources may have value beyond the value of their consumptive use by humans. « Surely a fish is worth something, even if a fisherman never catches it » (9). Moreover, some resources will be useful in some cases and have no value in other situations. In autumn when people go sport hunting, a park has use value ; in spring when people listen to its birds —

(7) Or re-instatement, according to the terminology of the Council of Europe Report. For a definition, see the Council of Europe Convention, art. 2 (8). Cf. *infra*, II.

(8) This principle approves or disapproves of every action whatsoever, according to the tendency which it appears to have to augment or diminish the happiness of the party whose interest is in question. Definition by BENTHAM Jeremy, *An introduction to the principles of morals and legislation*, J.H. Burns & H.L.A. Hart, ed., London/New York, Methuen, 1982, pp. 11-12.

(9) CROSS Frank, « Natural Resource Damage Valuation », *Vanderbilt Law Review*, vol. 42, 1989, p. 284.

which means they still use the park's natural resources but in a non-consumptive way — it is denied any value. Finally, some protected endangered species which can no longer be subject to trade (the same applies to their products) (10), for example whales, are completely valueless according to this restrictive economic perspective.

* Existence value : option, vicarious and bequest value

Fortunately, some authors and legislations also attribute an existence value to natural resources or their components, which represents their value even if they are never consumed. One can distinguish three subparts (11). The option value is the value placed on the preservation of a resource. In fact, its potential use is considered here, but only in the long run when financial resources might have increased, tastes have varied, exhaustible resources have run out, *etc.* This continuous link with consumption constitutes the main difference with the vicarious value, as the latter is totally abstract from any option of future use. It encompasses the non-consumptive recreational value (12), the aesthetic value or other non-material values of the environment. Finally, there is the intertemporel or bequest value which expresses the willingness to pay at present point in time in order to ensure that certain values are maintained and made available to future individuals. Thus, it reflects a desire to bequeath natural resources to future generations. The legal invention of this concept does not only indicate a major step forward in the field of environmental protection, but also bears witness to the fact that society has now fully acknowledged the necessity of an environmental reserve in the long run. This general awakening of inter-generational equity (13) requires each generation to use and develop its natural and cultural heritage in such a manner that it can be passed on to future generations in no worse condition than it was received. The notion of inter-generational equity is strongly

(10) The 1973 Convention on Trade in Endangered Species of Wild Fauna and Flora adopted in Washington, gives a list of not only species of animals but also of plants protected against international commercial trade, *I.L.M.*, vol. 12, p. 1085.

(11) CROSS, p. 284.

(12) However, some authors classify this value as an indirect use value. TURNER Kerry, PEARCE David & BATEMAN Ian, *Environmental Economics. An elementary introduction*, London, Harvester Wheatsheaf, 1994, p. 112. Note that option and bequest value could also be seen as use value this way. We prefer not to adopt this classification since we linked the concept of use value to the market price methodology which can not always be implemented with regard to the former values.

(13) The first instruments to invoke this concept were : the International Convention for the Regulation of Whaling of 1946 (*U.N.T.S.*, vol. 161, p. 72), the 1972 Stockholm Declaration (Principles 1 and 2, *Declaration of the United Nations Conference on the Human Environment.* UN Doc. A/CONF.48/14/REV.1. (1972)) and the 1982 World Charter for Nature (G.A. Res. 37/7, U.N. GAOR, 37th Sess., Supp., N. 51, pmbl., par. 3(a), p. 17. See, UN Doc. A/37/51).

linked to the concept of sustainable development (14), as shown by the *Iceland Fisheries* cases (15), the World Charter for Nature, the legal principles adopted by the World Commission on Environment and Development (16) and the draft Charter and Convention on the Environment and Development proposed by the Council of Europe. In fact, inter-generational equity promotes sustainable development.

Unfortunately, our present generation does not know how useful and necessary specific existing resources will be in the long run. As a consequence, it is impossible to determine the exact environmental reserve which will guarantee the survival of future generations. It is also difficult to evaluate precisely how serious a threat present pollution will pose. With regard to some extremely dangerous forms of pollution, such as nuclear waste which is mutagenous, we know that future generations will still be largely affected, whereas for other kinds of pollution, there exists a scientific uncertainty as to whether and to what extent future generations may be harmed. As a result, if we try to shape « intergenerational equity » now, the outcome will necessarily be subjective and reflect the view our present generation holds about the environment. This is why Brown-Weiss warns that modesty of mankind is required when measuring bequest value, not only as a matter of how much nature is to be preserved (quantitative aspect), but also as a matter of biodiversity (qualitative aspect) (17).

In my opinion, we should first ask whether it is fair to decide for our children and grandchildren according to our traditional pattern of thought, to our Cartesian structure of division. A new era might emerge whereby the harmonious interdependence of all nature's components is recognised as the ultimate goal. Recently developed concepts such as ecosystem, sustainable development, biocentrism (18), etc. can be considered as precursors of a gradual mentality change. Let us recall what Handl already stated in 1975 : « it is nowadays accepted as an undeniable fact that the earth's biosphere represents a single indivisible system characterised by the interrelation of its various functional and ecological subsystems, the disruption of any one of which promotes the breakdown and destabilisation of another. » (19) Furthermore, recognising the bequest value and thus attributing compensation for any diminution of this value, confronts us

(14) *I.e.* « development that meets the needs of the present generation, without compromising the ability of future generations to meet their own needs », World Commission on Environment and Development, *Our Common Future*, Oxford, 1987, p. 43.

(15) *UK* v. *Iceland* and *Germany* v. *Iceland*, *I.C.J. Report*, 1974, pp. 3 and 175 respectively.

(16) World Commission on Environment and Development, *Our Common Future*, Oxford, 1987, p. 43.

(17) Brown-Weiss Edith, « Developments in the Law : International Environmental Law », *Harvard Law Rev.*, vol. 104, 1991, p. 1540.

(18) For an explanation of this concept and the gradual mentality change, cf. *infra*, conclusion.

(19) Handl Gunther, « Territorial Sovereignty and the Problem of Transnational Pollution », *A.J.I.L.*, vol. 69, 1975, p. 53.

with a major problem of allocation. The question is : should the damages legally awarded in the present time be paid out in the future, or should we, with the damages, engage in restoration actions on behalf of our future generations ? Another interesting question arises : who should exercise legal standing on behalf of them (20) ? We will analyse the plausible answers in a general context in the following chapter concentrating on the problem of standing for environmental damage *per se* before national judicial bodies (II.B.).

With regard to all three sub-parts, we should bear in mind that existence value creates a perverse incentive to keep the public ignorant of the characteristics and attributes of the natural world (21). Indeed, it is in the polluting industry's interest to keep the real value of natural resources secret so that these may be destroyed without perceivable loss. If the polluter is able to escape liability for the harm he caused, this will entail optimal economic yet catastrophic societal and environmental results. Preventive mechanisms guaranteeing the public access to truthful and transparent information — held not only by public authorities but equally by the polluter — are already adopted by article 14 of the Lugano Convention (with regard to the information held by the former) and should be recognised on a general basis. In this way, industry would be barred from hiding relevant information and from polluting undisturbed.

The U.S. Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1982 (amended in 1986) and the Oil Pollution Act of 1990 (22) take account of existence value, especially of option and vicarious value. Furthermore, American legislation does not only award compensation for the loss in existence value suffered by « the society as a whole », but equally for the harm suffered by every single affected person. Let us take the example of a polluted lake. If the second option is chosen, the ultimate sum of compensation will equal the loss in existence value multiplied by the amount of families living around the lake. The American approach can therefore lead to extremely high compensation damages.

* Intrinsic value

With regard to use and existence value, their anthropocentric content may be criticised since a natural resource's value will be linked inherently to the actual or potential utility it represents for living or future human beings. One can correctly raise the point that they assume the superiority

(20) Some interstate proceedings before the I.C.J., can be interpreted as instituted on behalf of future generations. For example, *Nauru* v. *Australia*, *Y.I.E.L.*, vol. 1, 1990, p. 271. At a transnational level the answer is more difficult.

(21) Cross, p. 291. The same thought is expressed in « What humans owe to animals ? », *The Economist*, August 19th-25th 1995, p. 18.

(22) Respectively 42 *U.S.C.*, § 9607 (a) (4) (C). and 33 *U.S.C.*, §§ 2701-2761 (Supp. IV 1992).

of human interest over the interest of other entities of nature and that human self-interest is the paramount criterion for pursuing environmental protection. In short, they reflect « species chauvinism » (23) and still offer scope for undue environmental destruction. For these reasons, some promote an ecological public order where natural resources are fully protected *in se* and the environment's autonomy is acknowledged. They urge us to consider the intrinsic value of natural resources which is the value they possess independently of human interests or recognition. In other words, it is an inherent value, *i.e.* belonging to nature's life, of spontaneous interaction between its different components and completely out of the reach of human action. Recently elaborated multilateral instruments have recognised the intrinsic value of nature and reflect a paradigm shift in environmental law. The 1979 Berne Convention on the Conservation of European Wildlife and Natural Habitats (24), the Convention on Biodiversity (25) — which puts non-anthropocentrism first — and the World Charter for Nature are clear illustrations of this renovating and progressive consciousness.

Nevertheless, one should never forget that the legal assessment of the value attached to natural resources is, and remains, « a human undertaking that is limited inescapably to human understanding and choice. » (26) In fact, only enlightened human preference, formed by a well-informed human being on the scientific, physical, biological composition of a natural resource, can truly understand its interaction and function within an entire ecosystem and will be able to have some kind of an idea about the intrinsic value of nature (27).

(2) Methods for monetising « damage to the environment *per se* »

Monetising or assessing environmental damage refers first of all and inevitably to the valuation of natural resources, *i.e.* to putting a monetary value on their components and their recognised value(s) we have studied in the previous section. A preliminary question put by Martin however is, « *faut-il évaluer l'inévaluable* ? » (28) The author answers, « *On peut faire valoir tout d'abord qu'évaluer l'inévaluable, c'est faire entrer dans la sphère de la marchandise des éléments qui relèvent de la vie et non de la création humaine. Evaluer, c'est au sens propre dénaturer et désacraliser. On peut*

(23) D'AMATO Anthony, « Do We Owe a Duty to Future Generations to Preserve the Global Environment ? », *A.J.I.L.*, vol. 84, 1990, p. 195.

(24) *E.T.S.*, vol. 104.

(25) Convention on Biological Diversity, *I.L.M.*, vol. 31, 1992, pp. 818-841.

(26) CROSS, p. 296.

(27) See TURNER, p. 38. He argues, on the contrary, that the debate between intrinsic and other values is sterile. « Because it is not possible to show empirically what intrinsic value in nature is ; it has to be accepted or rejected intuitively. »

(28) MARTIN Gilles, « La réparation du dommage écologique en droit international et comparé », in *Per un tribunale internazionale del'ambiente*, 21-24 aprile 1989, p. 223.

avancer ensuite que, techniquement, l'évaluation se heurte à des obstacles insurmontables, la nature ne pouvant être mise en compte. » (29) The above citation indicates that the quantification of damages for compensation purposes creates not only a philosophical, but also a technical problem. Wetterstein affirms that the issue « touches one of the most topical and major problems of the whole environmental impairment liability question. » (30)

With regard to the philosophical argument, if environmental protection is the ultimate goal, we have to beg the question. Indeed, we should always bear in mind that the assessment process serves compensation — thus reparation and protection — purposes, and that it is only a secondary strategy operating when restoration is inadequate, impossible or disproportionally expensive at first sight. With regard to the technical argument, we have to distinguish the situation of assessment of damage to use value, from that of assessment of damage to existence or intrinsic value. We will now analyse these two cases consecutively and afterwards we shall evaluate to what extent these methods are satisfactory.

* Monetising damage to use value of natural resources : the market price methodology, the travel cost analysis and hedonistic price valuation

Damage to the use value of a natural resource is assessed by means of « revealed preference » valuation methodologies. These can either be based on actual market transaction data, *i.e.* on the market price resulting from the injured natural resource, or on observed changes in human behaviour.

The first possibility or the market price methodology, is resorted to in the case of private environmental goods, *i.e.* of natural resources which are traded on the private market. The diminution of the market price will then express the damage in monetary terms. This methodology is a straightforward, precise and certain valuation method. Nevertheless, it fails to include the consumer surplus from a transaction and does not capture the use value of damaged « public » environmental goods (which cannot be traded on the private market), let alone existence and intrinsic value of damaged natural resources.

The assessment of the damaged use value of « public » environmental goods or resources calls for the second type of « revealed preference » valuation methodologies which observe changes in human behaviour. Public environmental resources are characterised by their non-exclusive and

(29) *Loc. cit.*

(30) WETTERSTEIN Peter, « Trends in maritime environmental impairment liability », *Lloyd's Maritime and Commercial Law Quarterly*, Part 2, May 1994, pp. 238-9.

indivisible nature (31). A clear example is a State-owned lake offering water-sport opportunities to any interested person. The two methods which have been developed for this situation are the travel cost and hedonistic price analyses. Whereas the market price methodology reflects an equilibrium between supply and demand, the latter two methods try to deduce the damage to a natural resource from the decrease in demand for the public good. Thus they are pure demand approaches, the offer *per definitio* being constant.

The travel cost analysis uses the travel expenses of visitors to monetise the value of a given recreational site. It seeks to determine the willingness to pay by each group of travellers before and after the pollution occurred, the difference reflecting the damage to the use value of the public natural resource. The willingness to pay, expressed in economic terms, equals the travel costs incurred plus the relevant consumer surplus (32). This method has been adopted within the U.S. but still ignores an important influential factor, namely the visitor's opportunity cost for time (33).

The hedonistic price method « measures the extent to which the value of a non-marketed commodity, such as a pristine environment, is captured directly in the price of marketed commodities, such as land. » (34) Accurate property value data are required in order to produce a realistic picture. This methodology is based on the assumption that property prices capture the quality of the environment. It measures indirectly people's willingness to pay for, or to accept, the changing environmental quality : a higher property price will reflect higher environmental quality. The hedonistic price analysis is useful to measure damage resulting from air pollution to historical monuments if these are recognised as a component of « the environment ».

These methods have mainly been developed by economists with regard to massive accidental pollution, but have failed to address the problem of chronic pollution which is in reality more neglected on a general basis. The reason lies in the fact that « the legal psychological effect (*'het rechtspsychologische effect'*) of a catastrophe is bigger and therefore more precious to the development of the law since the legislator generally reacts

(31) Non-exclusion means that one person cannot prevent ('exclude') another from consuming the resource. Indivisibility means that they will be consumed jointly and that the consumption of the good (for example clean air) by one person does not diminish any other person's consumption. TURNER, p. 25.

(32) KULA Erhun, *Economics of natural resources, the environment and policies*, 2nd ed., London/Glasgow, Chapman & Hall, 1994, pp. 248-250. Kula proposes the following equation : V = f (C, Y, Cx, Z). V = number of visits, C = Cost, Cx = cost of visiting substitute recreational sites from each zone, Z = socio-economic factors.

(33) NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (hereafter NOAA), *Advance Notice of Proposed Rulemaking*, March 13 1992, 15. Cfr Chapter IX, Natural Resource Damage Assessments, 57 FR 8964, p. 28.

(34) CROSS, p. 313.

to stimuli from society arising out of accidents and scandals. » (35) Chronic pollution occurs on a continuous basis and can either arise as the normal, inherent secondary effect of a legal activity or be voluntarily caused (36). It is proven to be more extensive in nature than accidental pollution. Nevertheless, because of its insidious character, it is more difficult to notice and being less spectacular, it receives less attention not only from the media but equally from the legislator, the polluting industry and the economists. In order to fill this gap, we will try on different occassions (37) to analyse whether the methods or strategies developed for accidental pollution are equally suitable in the context of chronic pollution arising as a normal, inherent secondary effect of a legally exercised activity. With regard to the usefulness of the travel costs and the hedonistic price method, the problem seems to us that since individuals might not be aware of subtle fluctuations in the short run, their use could be inappropriate. However, if one concentrates on the real nature of chronic pollution as the product or the result of a continuous, gradual or cumulative deterioration of natural resources, these two analyses can be suitable on a long term basis. A clear example is property on which the impact of chronic pollution will only be tangible in the long run (38).

* Monetising damage to existence and intrinsic value of natural resources : the contingent valuation methodology

Existence and intrinsic value are not transparent notions like use value for whose assessment one can rely on objective factors, such as the market price, or on actual change in human behaviour. So far, the contingent valuation methodology (hereafter CVM or the willingness to pay/to sell analysis (39)) has been the only method developed in order to quantify the loss in existence or intrinsic value. It can equally be applied to measure use

(35) Translation from Dutch. VAN DUNNÉ Jan, « Aansprakelijkheid voor schade door grensoverschrijdende milieuverontreiniging : civielrechtelijke aspecten », in LAMMERS Johan and VAN DUNNÉ Jan, *Aansprakelijkheid voor schade door grensoverschrijdende milieuverontreiniging : volkenrechtelijke en civielrechtelijke aspecten*, Mededelingen van de Nederlandse Vereniging voor Internationaal Recht, Nederlandse groep van de International Law Association, N. 103, oktober 1991, p. 141. See also, Commission of the European Communities, *Communication from the Commission to the Council and Parliament and the Economic and Social Committee : Green Paper on Remedying Environmental Damage* (hereafter, Green Paper), COM (93) 47 Final, p. 4. REMON-GOUILLOUD Martine, « L'indemnisation des victimes de la pollution causée par les activités en mer », in *Indemnisation des dommages dus à la pollution*, Paris, OCDE, 1981, p. 61. ROMY Isabelle, *Les Pollutions transfrontières des eaux : l'exemple du Rhin, Moyens des actions des lésés*, Collection juridique romande, Etudes et pratique, Lausanne, Payot, 1990, pp. 29-30.

(36) ROMY, *ibid.* The author analyses in detail the *Alsatian Mines de Potasse case* where the plaintiffs, dumping their saline waste into the Rhine, caused 37.5 % of the salinity level of the river.

(37) Cf. *infra* : the *ex ante* CVM, the base line problem, the resource based compensation, etc.

(38) NOAA, p. 29.

(39) For a detailed analysis of valuation methodologies, we refer to U.S. DEPARTMENT OF THE INTERIOR (hereafter, DOI), *Notice of proposed rulemaking*, April 29 1991, 56 FR 19752, pp. 1-52.

value. The CVM involves conducting surveys to determine the public's hypothetical willingness, either to pay for environmental quality or to accept compensation for environmental degradation (40). Conclusions here are not drawn from actual behaviour as is the case with revealed preference methodologies, but from attitudes people declare they would adopt in hypothetical circumstances. For this reason, the assessment of damage to existence or intrinsic value is not only technically difficult ; generally the results of the CVM test will also be subjective. Indeed, they will vary according to human perception of the environment and the « ecological conscience » of the society in which the survey is made (41). Additionally, the willingness to pay reflects the income position of respondents as much as it measures the damaged value of resources ; it can therefore be seen as a « double subjective » methodology.

Furthermore, the value of environmentally significant resources to society is reduced to an aggregation of individual willingness to pay, and becomes fragmentary in nature (42). Other fundamental negative sides which make its use rather random can be discerned. CVM presents a strategic bias resulting in a free rider problem. As a matter of fact, the individual may provide a biased answer in order to influence a particular outcome. For example, if a person has to pay on the basis of his or her stated willingness, he/she may try to conceal the true figure by stating a much smaller one in order to qualify for a lower price. This bias might be partially avoided by telling individuals in advance that they will not be charged according to their willingness to pay, but according to the average bid price. CVM further entails an information bias, arising when individuals are asked to value damage to attributes with which they have very little or no experience ; and an instrumental bias which consists in the fact that the starting bid may be influential and not promote the acceptance of a further much higher price.

The foregoing drawbacks explain why its use is often considered controversial (43). On the other hand, one can argue that it is still preferable to resort to a partially reliable method since in the absence of valuation, damage could come across as insignificant to some polluters, given their

(40) Kula provides the following equation, WTP = f (Q, Y, T, S). WTP = willingness to pay. Q = quality/quantity of the attribute. Y = income level. T = index of tastes. S = vector of socio-economic factors. KULA, p. 245. In general, it is lower than the willingness to accept or sell. The answer lies in human psychology. Apparently people value more highly the loss of something they already own, than the gain of something they do not yet have. It is generally accepted that the true measure of natural resource value probably lies somewhere between willingness to pay and willingness to sell. If one has to choose, it is recommendable to opt for the second alternative which is more democratic in nature. One can rightly argue with Cross that in the public forum each citizen should have a vote of equal value, regardless of his wealth. CROSS, p. 336.

(41) *Loc. cit.*. See also TURNER, pp. 126-127.

(42) STEWART B., « Natural Resources Damages », annex to *Background Paper* (Sand Philippe, Mackenzie Ruth and Kalastchi Ruth, *eds.*), 1995, (forthcoming), p. 6.

(43) NOAA, p. 29. TURNER, p. 38.

immediate economic interests (44). In other words, damage could be left with no reparation and the environment could remain as the ultimate victim.

The CVM can be employed *ex post* or *ex ante*, *i.e.* after or before the damaging event. The U.S. CERCLA legislation, as implemented, follows the traditional *ex post* paradigm. The major difficulty of this traditional approach is that many aspects of the environment do not have a ready market and that reported willingness may spuriously increase once an incident has occurred (45). The Council of Europe's report on « Assessment of Damage to the Environment », formulated by Giampietro and Miccoli (46), proposes an *ex ante* technique. Detailed regional and local « environmental plans » — the primary function of which is to assess accurately : *a*) the pre-harm state of the environment and *b*) the normal willingness to pay to maintain that standard of environmental quality — are being prepared in advance. This information is used to produce a graph or a table which indicates the public's willingness to pay for a continuum of differing standards of environmental quality. The advantage of the *ex ante* technique is that the loss in public welfare can immediately and automatically be calculated as soon as any occurrence causes a loss or modification of natural elements. This method avoids the earlier identified strategic bias problem arising upon knowledge of a polluting incident. In my opinion, the *ex ante* conception is equally much more suitable to measure a loss in existence and intrinsic value of natural resources caused by chronic pollution. Indeed, assessing damage caused by chronic pollution requires a continuous, long-term evaluation system. This can be achieved if the *ex ante* system is implemented.

* Evaluation of the available methods for monetising non-economic damage to the environment *per se* : a failure entailing negotiation

The principle that harm which does not entail economic loss should be compensated, is not absolutely new in law. Nowadays, compensation for moral injury (of human beings or States) is universally granted by domestic and international law (47). Logically one could argue that non-economic

(44) Romy, p. 31.

(45) Wilkinson David, « An appraisal of 'Assessment of Damage to the Environment' », *European Environmental Law Review*, April 1993, p. 109.

(46) Giampietro Franco and Mioccoli Saverio, *Assessment of Damage to the Environment*, Strasbourg, Council of Europe, 1992, 79 p.

(47) With regard to interstate relations, Anzilotti writes, « *l'élément économique est bien loin d'avoir dans les rapports entre États un poids semblable à celui qu'il a entre les particuliers : l'honneur et la dignité de l'État l'emportent de beaucoup sur les intérêts matériels.* », Anzilotti, *Cours de droit international*, Sirey, 1929, vol. I, p. 523. See also Barboza, Eleventh Report, § 21 ; Rehrbinder Eckard, « Ersatz ökologischer Schäden — Begriff, Anspruchsberechtigung und Umfang des Ersatzes unter Berücksichtigung rechtsvergleichender Erfahrungen », *Natur + Recht*, vol. 10,

damage to the environment's components, *i.e.* the damage caused to their existence and intrinsic value, should equally be compensated. Indeed, just like moral harm, computing and quantifying this environmental damage in monetary terms is extremely difficult and somehow subjective. Generally, the only guideline given for the damage assessment, is to reach an *equitable* result and we know that the term « equitable » is a vague legal notion appealing to the moral conscience of the judge or any other person responsible for the quantification of the damage such as the administrative trustee (48) under CERCLA. Finally, the judge will receive the competence to appreciate freely the nature and the importance of the indemnity to be awarded (49). This approach « suffers objections of encouraging instability and relativity in the legal system. » (50)

We have seen that U.S. legislation is progressive and allows compensation for damage to existence value. However, on a general basis, national or international legislation (51) still require claims for compensation to be based on a quantifiable *economic* loss, the standard measure of damages being the diminution in market price. Some authors or national legislators even believe that claims for non-economic environmental damage cease to be claims for compensation, but instead seek to impose penalties on the polluter as they are more akin to a criminal fine (52). The U.K. for example, holds the view that response to this kind of damage should be given through a criminal or civil sanction and not through a compensation system (53). However, the main drawback of this general, restrictive approach is that the large majority of potential claims for compensation will be negated since « only about five percent of some resources, such as plants and animals, possess an established economic value. » (54) An innovating approach was taken in the 1989 Patmos litigation, *The Ministry of the Merchant Marine and other* v *Patmos Shipping Corporation & the United Kingdom Mutual Steamship Assurance Association and others*, in which the issue of compensation for damage to the marine environment

1988, N. 3, p. 106 ; TRUDEAU Hélène, « La responsabilité civile du pollueur : de la théorie de l'abus de droit au principe du pollueur-payeur », *Les Cahiers de Droit*, vol. 34, 1993, p. 787.

(48) Cf. *infra*, II.B. for an explanation of this concept.

(49) REST Alfred, *Project of a Convention on Compensation for Transboundary Damage Caused to the Environment*, Institut de droit international public et de droit public comparé de l'Université de Cologne, E. SCHMIDT (ed.), Berlin, 1976, art. 17.

(50) BOYLE Alan & BIRNIE Patricia, *International Law & the Environment*, Oxford, Clarendon Press, 1992, p. 126.

(51) Cf. The 1984 and 1992 Protocols to the International Fund for Compensation for Oil Pollution Damage (hereafter the IFCOP) established in 1971.

(52) DE LA RUE Colin, « Environmental damage assessment », in *Transnational Environmental Liability and Insurance*, Kroner Ralph (dir.), London, Graham and Trotman, 1993, p. 76. NOAA, p. 28.

(53) See WALL James, « Intergovernmental oil pollution liability and compensation : theory and practice », *Marine Policy*, September 1993, p. 474. For a jurisprudential critique, see DE LA RUE, p. 76.

(54) CROSS, p. 307.

based on unquantifiable factors was raised. For the Court of Appeal it did not matter that the damage in question was not « quantifiable in an arithmetic-accounting sense ». As soon as the damage was of an « unquestionable economic nature » and had « economic relevance » to the whole community, the damage came within the scope of the 1969 International Convention on Civil Liability for Oil Pollution Damage, its 1984 Protocol, and the 1971 Convention on the Establishment for an International Fund for Compensation for Oil Pollution Damage (55). Consequently, it was eligible for compensation by the IOPC Fund. Nevertheless, we can affirm that damage to the environment *per se* will generally be legally and economically neglected if no harm to human consumptive interests has occurred. The environment *per se* is thus the ultimate victim of the anthropocentric and economically-inspired nature of our contemporary (international and national) legislation.

In fact, given the huge obstacles met when trying to quantify non-economic damage, claims for compensation are often settled by means of lump sum agreements. The technique is spreading in national legislation and is frequently resorted to by national courts (56). They offer the advantage of being simple to administer and do not require any calculation or quantification of the damage. A value — which will be higher, the rarer and more protected a species is — is put on different species. Reparation will then consist in providing the sum of the value of the destroyed species, times the number of the species which disappeared. Lump sum awards are of course quite abstract and for this reason always introduce some arbitrariness. Nevertheless, they cannot be equated with theoretical calculations of environmental damage which are unanimously rejected. The latter are abstract quantifications of damage, calculated in accordance with theoretical models and do not take into account sufficiently the differences in environmental damage situations (57). Therefore, they are no longer legally accepted. A typical example was the former Soviet Union's legislation relying on an abstract evaluation method, called « *metodika* », which calculated 2 roubles per square meter of polluted water, the volume being defined by the size of the oil spill. Lump sum agreements, as opposed to

(55) Respectively, *I.L.M.*, vol. 9, 1970, p. 5 and *I.L.M.*, vol. 11, 1972, p. 284. See WILKINSON David, « Moving the Boundaries of Compensable Environmental Damage Caused by Marine Oil Spills : the Effect of Two New International Protocols », *Journal of Environmental Law*, vol. 5, 1993, N. 1, pp. 82-85.

(56) MARTIN, p. 266.

(57) A clear proof of this radical refusal is the International Fund for Compensation for Oil Pollution Damage (hereafter the IFCOP), Assembly Resolution N. 3 of 10 October 1980, FUND/A/ES.1/13, § 11 (a) and Annex I. For a further analysis of this Fund system we refer to DE LA RUE's article and to JACOBSSON Mans and TROTZ Norbert, « The Definition of Pollution Damage in the 1984 Protocols to the 1969 Civil Liability Convention and the 1971 Fund Convention », *Journal of Maritime Law and Commerce*, vol. 17, October 1986, N. 4, pp. 467-491 ; REDGWELL Catherine, « Compensation for Oil Pollution damage : quantifying environmental harm », *Marine Policy*, vol. 16 (2), 1992, p. 91.

the abstract methods, do take notice of the differences since they are reached on a case to case basis. Furthermore, they discharge the party acting on behalf of the environment of the burden of proof and avoid time-consuming, complicated calculations. If the compensation is to be invested in the interests of the environment itself, the technique can only be encouraged.

On the other hand, where damages have been considerable, parties have often rejected legal action and have relied upon negotiations to determine the amount of compensation. A typical example is the *Mines de Potasse d'Alsace (MDPA) case* where the MDPA undertook to pay 3,750,000 guilders to the plaintiffs and a vegetable partnership (58). The horticulturists for their part renounced any further action against the MDPA. In the *Sandoz case* equally, the French Ministry of the Environment, ALSARHIN — an Alsatian association for the defence of the pollution victims — and the Sandoz firm reached an agreement in September 1987. Sandoz resorted to its insurance in order to repair the damage and paid out a lump sum of 46 million FF. These cases further indicate that all parties concerned, the State, the polluting industry, the represented damaged environment and the injured individuals are involved in these negotiation procedures.

These two tendencies of dispute settlement through lump-sum agreements and negotiation, introduce a risk of fragmentary compensation mechanisms and two-speed damage assessments procedures, resorting to lump sum agreements for minor damages and negotiation for substantial harm. The Council of Europe's report already recommends this dual approach for compensation assessment according to factors such as the size of the incident : in case of slight damage, simplified assessment procedures (*i.e.* lump sums) — which clearly should not be more costly than the damage itself — are appropriate. The U.S. Department of the Interior in charge of CERCLA has also promulgated Standard procedures for simplified assessment (type A) requiring minimal field observation and site-specific procedures for detailed assessment in individual cases (type B).

In conclusion, it is clear from the study above that the current legal system does not protect the environment fully since, generally, only damage to the value of consumptive use to human beings is legally recognised. Where compensation is granted for non-economic damage, lump-sum agreements or political negotiation are likely to take place since the technical quantification of this kind of damage is still problematic. In

(58) On 23 September 1988, the Dutch Supreme Court confirmed the decisions rendered by the Rotterdam district Tribunal and by the Hague Court of Appeal, pronouncing the illegality of the discharge, as well as the responsibility (of the MDPA) to repair any damage occurred since 1974 and any ulterior damage. The agreement relating to compensation thus anticipated this Supreme Court's decision with regard to the amount of compensation to be paid.

the following section, we will analyse whether all quantifiable pollution is covered by a legal claim for compensation.

B. — Compensation for damage to the environment *per se* : the threshold problem

So far we have ascertained that if compensation is to be awarded for damage to the environment *per se*, this damage needs to be quantified in monetary terms. Nevertheless, environmental harm will never be taken fully into consideration from a legal perspective and compensation will only be granted for part of this quantifiable harm suffered by the environment *per se*. In fact, this means that pollution is not interchangeable with « damage to the environment *per se* which is eligible for compensation ». Only harm beyond a certain threshold will fall into the category of « compensable damage » and will trigger responsibility or liability. We will now examine whether the concept of « threshold » is legally clear, or, in other words, whether it favours liability purposes. We will split our study in two small parts and analyse consecutively the situation on the international (1) and the transnational (2) scenes.

(1) The threshold problem in the context of inter-State responsibility

Whereas the traditional international order was only concerned with ensuring pacific « coexistence » between its members, recent decades revealed the increasing interdependence between States and led to the emergence of the international law of « cooperation ». Interdependence is enhanced in the environmental field since air, water, fauna and flora are not subject to borders. Understanding this, an absolute standard prohibiting States to cause harm to the environment under the sovereignty of other States would be completely unrealistic. The other side of the coin is that neighbouring States equally have to tolerate a minimal level of transboundary pollution and that only pollution beyond this threshold will entail inter-State responsibility.

Only 50 years ago, the Trail Smelter Arbitration ruled that transboundary harm had to be tolerated by the neighbouring State unless it was of a « serious » nature and established by « clear and convincing evidence » (59). However, the standard set was increasingly regarded as containing too high a threshold and a new terminology emerged. It is generally argued that the change to the term « significant harm » was not merely of a linguistic nature, but was meant to indicate a quantitative lowering of the threshold : namely one situated in between serious harm

(59) *Trail Smelter Arbitration Award*, *A.J.I.L.*, vol. 35, 1941, p. 684.

and minor trouble to be tolerated (60). The question remains as to where exactly in between these two extremes the treshold is located. The problem is that no answer is forthcoming on the grounds of objective predetermined criteria, such as the state of development of technically advanced facilities, the usual degree of pollution which is emitted by such facilities, the prior degree of pollution of the respective area and the hereby resulting restriction in using the area by the burdened State (61).

Most often, international legal instruments leave it to the States involved to determine the applicable threshold by mutual agreement (62). In short, it is up to the parties to answer the question on a case-by-case basis and in the light of the concrete circumstances. The problem is greater when parties do not reach an agreement, or even worse, when the emitting State is indifferent and refuses to engage in action. To avoid being confronted with a total legal lacuna, some international legal instruments state that the threshold will be crossed from the moment the affected State is forced to take positive measures in the interest of the protection of its environment or population (63). This solution reveals an existing danger of subjectivity, or even arbitrariness, since it is completely left to the State saddled with the damage to decide when and how to cope with the pollution its neighbour thrusted on its territory and when (if at all) to invoke the latter's responsibility.

(2) The threshold problem in the context of transnational liability

In more recent times however, environmental conventions harmonising the States parties' national legislations within a certain region and applicable to transnational private claims (victim residing on State A's territory versus polluter residing on State B's territory) have underlined the importance of strict liability (64) within the context of accidental trans-

(60) SACHARIEW K., « The Definition of Thresholds of Tolerance for Transboundary Environmental Injury Under International Law : Development and Present Status », *Netherlands International Law Review*, vol. 37, 1990, N. 2, p. 193. « The 'serious consequence' standard enunciated in the Trail Smelter Arbitration, sets an unreasonably high threshold for liability claims in the modern context of accumulations of low-level insults » ; GAINES Sanford, « Taking Responsibility for Transboundary Environmental Effects », *Hastings International and Comparative Law Review*, vol. 14, 1991, N. 4, p. 340.

(61) WOLFRUM, p. 311. This author clearly underlines that the first criterion should never be a justification for transfering production costs from the emitting State to its neighbour. On the contrary, the community of States should be called upon to balance the burden of States according to their economic development, *ibid.*, pp. 312-313.

(62) See for example, Economic Commission for Europe, *Final Report of the Task Force on Responsibility and Liability regarding Transboundary Water Pollution*, ENVWA/R.45, 20 November 1990, Annex Guidelines on Responsibility and Liability regarding Transboundary Water Pollution, § 16 (2).

(63) *Loc. cit.*

(64) A strict liability regime creates a system where the liability of the author, *i.e.* the polluter, and the obligation to repair, arise automatically as soon as the injury occurs, regardless of a breach of any rule.

boundary pollution. The Lugano Convention is a typical example. In fact one notices that in the context of transnational liability as well, only harm beyond a certain threshold is accepted as « damage eligible for compensation » (65). The threshold here acknowledges the « fact that all human beings today are both polluters and victims of pollution. » (66) The existence of the threshold, from an economic viewpoint, lies in the fact that if one wants to engage in a sustainable economic activity, it is neither practical nor desirable to completely eliminate all negative externalities, such as pollution. Indeed, if an industry had to account for all pollution it causes, the costs associated to the activity could outweigh all potential profits. Equally, from a legal perspective, the existence of a threshold or a *de minimis* standard is rooted in the notion that the law cannot account for every trifling wrong (67).

In the latter conventions the threshold is set above « tolerable levels (of pollution) under relevant local circumstances. » (68) This means in concrete terms that it is determined in the light of the local circumstances : a threshold in rural zones will differ from thresholds operating in urban areas. In fact, this means that a threshold can never be absolute and will most likely be ascertained *ex post* on a discretionary basis. Furthermore, for practical reasons these conventions generally impose a ceiling on compensation, *i.e.* a 'maximum aggregate amount of compensation', and a ceiling on insurance cover. As a consequence, the recoverable harmful effects are to be determined somewhere in between the vague threshold and the ceiling (69).

In conclusion, we should bear in mind that « how and where exactly » the limits of damage eligible for compensation are fixed will ultimately reflect how and where a given society sets its priorities. The questions are : does the society favour industrial and economic activities at the expense of the environment or does it urge polluters to reduce the damage to the environ-

(65) In his fifth Report, Barboza introduced the term « appreciable », both as a qualification of harm and for the purpose of defining the significance of the risk inherent in some activities falling within the scope of the draft. BARBOZA Julio, *Fifth Report on International Liability for Injurious Consequences Arising out of Acts not Prohibited by International Law*, 1989, A/CN.4/423, §§ 23-25.

(66) BARBOZA, « Eleventh Report... », § 25.

(67) Other Civil Liability instruments establish thresholds for environmental damage which is *significant* (for example, the 1992 Helsinki Convention on the Protection and Use of Transboundary Watercourses and International Lakes, art. 1(2)), or *serious* (for example, the 1992 Helsinki UN/ECE Convention on the Transboundary Effect of Industrial Accidents, art. 1(d)). *I.L.M.*, vol. 31, p. 1334.

(68) Cf. article 8 of the Council of Europe's Convention. Explanatory Report, § 60. It is to be noted that the burden of proof falls upon the operator.

(69) In the context of the study led by the International Law Commission on Activities Not Prohibited by International Law, Barboza argues that « the lower and upper limitations demonstrate that *restitutio in integrum*, as defined in the *Chorzow Factory* case for an international wrongful act is not to be as rigorously respected » in this context, BARBOZA, « Eleventh Report », § 25.

ment *per se* to a real minimum ? Does it hold all interests of the different actors involved (the environment, the polluter, the State, *etc.*) for equal when it puts the threshold ? Furthermore, if compensation is generally paid for unreasonable or intolerable inconveniences, we must remember that the term « unreasonableness » is subject to the evolving ecological awareness or « green » thinking of the society in which the threshold operates. Therefore, every single compensation regime is a flexible one, and the legal scope of « damage to the environment *per se* » continuously susceptive to extension.

II. — *Non-monetary reparation of damage to the environment* per se

In the preceding section we encountered two main legal problems when compensation for damage to the environment *per se* is to be awarded. The first problem related to monetary quantification of damage. The second one revealed that the threshold of « damage eligible for compensation » is not an objective and tangible concept. We underlined that the first problem is a subsidiary one, compensation occurring when non-monetary remedial measures are technically or economically unfeasible.

In the present section, we propose to focus on non-monetary reparation of damage to the environment *per se*. First, we will analyse the potential non-monetary remedial measures : *i.e.* restoration and acquisition of equivalent resources (A). Secondly, we will examine some of the legal problems which arise when restoration is undertaken : the preliminary problems of homeostasis (70) and proportionality (B) and the base line problem which re-introduces in a certain way the concept of « threshold of damage » encountered in section I (C). Finally, we will see that monetary compensation and non-monetary reparation should not be chosen exclusively, as their interaction leads to more efficiency and often brings about results which are closest to *restitutio in integrum* (D).

A. — Non-monetary remedial measures : restoration and acquisition of equivalent resources

As already indicated, the term « damage to the environment *per se* » refers, in this particular context, to the cost of non-monetary remedial measures. Generally, these receive absolute priority since they aim immediately and directly at the preservation and the protection of the affected environment itself. Remedial action can take the form of restoration — or re-instatement according to the terminology used in the Council

(70) The concept is defined in point B.

of Europe Convention (71) — and acquisition of equivalent components, combined with their re-introduction into the environment. It is generally admitted that restoration should be the primary objective and that acquisition should be considered only as a last resort (72). The reason lies in the fact that the former aims at preserving the existing polluted environment, whereas the latter basically boils down to abandoning an environmental site when restoration is not feasible. One will then have to look for an existing site or create a new one which will provide the same environmental functions as the abandoned one. It is understandable that the latter method has been successful in American legislation since one can still find a relative abundance in non-used wetlands on the vast territory of the U.S. However, its application is likely to be impossible within the European context, given the density of population.

B. — Restoration of damage to the environment *per se* : the preliminary problem of homeostasis and proportionality

Restoration implies that nature should have a chance to recover and again become a viable ecosystem, or at least maintain its vital permanent functions. In fact, it aims at a *restitutio in integrum*. In order to enable nature to recover this pristine state, supportive human action will be necessary. Thus restoration equates supportive action and is similar to « affirmative action » which aims at rectifying actively the continuing effects of past discrimination rather than simply ceasing to discriminate. Accordingly, restoration in favour of the environment is an attempt to correct in the present the continuing effects of past pollution and disregard of nature's rights rather than simply acknowledge these rights in order to diminish pollution in the future (73).

Supportive environmental action should always complement nature's own natural capacity to recover. In other words, the extent to which restoration is to be undertaken should not be exaggerated but determined in relation to the principle of homeostasis. « Homeostasis describes nature's complex symbiosis and interdependence, as well as its ability to adapt to outside stress » (74) and recover natural equilibrium of its different yet interdependent components. Since human knowledge of nature's ways is far from being complete, we must again resort to modesty as Brown-Weiss recommended in the context of bequest value. Cross expresses this idea in eloquent terms, « although all of the restored resources may be organic, the

(71) For a definition, see art. 2 (8) of the Council of Europe's Convention : « 'Measures of reinstatement' means any reasonable measures aiming to reinstate or restore damaged or destroyed components of the environment (...) ».

(72) DOI, p. 10. NOAA, p. 37. Explanatory Report of the Council of Europe Convention, § 39. TRUDEAU, p. 791.

(73) EMMENEGGER, p. 590.

(74) CROSS, p. 333.

result is artificial (...). Once a site has been altered, by humans or otherwise, its natural fate is modified. Only by letting nature take its course can people fulfil the important objective of natural homeostasis. Consequently, a relatively simple, minimalist restoration that cleanses the site of excessive human-made stress is best. » (75) It is clear that this approach goes beyond mere anthropocentric environmental protection, as its ultimate goal is to respect nature's life as dictated and inspired by nature itself.

If one succeeds in identifying a restorative action respective of the homeostasis principle, the reparation plan should normally go through unless its estimated costs are grossly disproportional (76), *i.e.* excessive in relation to the result pursued and the means employed. The proportionality principle is, in our sense, reflected in the generally accepted requirement clearly formulated in article 2 (8) of the Council of Europe Convention, that « measures of reinstatement » should be « reasonable ». For clarity purposes, we should add that the cost estimation is provisory and should be viewed as a preliminary endorsement of planned restoration (77). It differs from the final assessment of damage which can only take place *a posteriori*, *i.e.* after the measures have been taken. The problem of course is to find a reliable, objective and efficient method for measuring proportionality. The most original test to determine whether restoration costs are grossly disproportionate is provided by Cross for whom the willingness to sell valuation is the bench-mark. From the previous study on the Contingent valuation Method resulted that the willingness to sell could be considered as the upper limit of the true value of damages. Cross therefore proposes that the planned restoration should be executed unless its estimated costs significantly exceed a reliable *ex ante* expressed willingness to sell valuation (78). On the other hand, the U.S. Department of the Interior and NOAA (79) leave it to the trustee's determination to define what is « grossly disproportionate ». This approach leaves more scope for discretion as it

(75) *Ibid.*, p. 334.

(76) See the American CERCLA and OPA legislation. DOI, p. 30. NOAA, p. 27.

(77) This does however not mean that the preliminary estimation can be speculative, as is clearly illustrated by the reference generally made to the measures of reinstatement actually undertaken or *to be undertaken* (see, for example, article 2 (7) (c) of the Council of Europe Convention). Any restoration plan made, should be intended to be carried out eventually and effectively. An illustrative case is the *Puerto Rico v. S.S. Zoe Colocotroni*, where the financial values attributed to the damage were pure notional costs since the government agencies (the trustee) had no intention of implementing the restoration plan to repair the environment by purchasing 92 million marine organisms from biological supply laboratories. The assessed damage was thus purely fictive. *Puerto Rico* v. *Steamship Zoe Colocotroni*, 628 F.2, 652, 676-77 (1st Cir. 1980). The case related to the U.S. Oil Pollution Act. Some authors link disproportionality to speculation. Colin de la Rue, for example, argues that « if a rehabilitation plan lacks the sense of proportion, a possible explanation is that the claimant in fact has no intention of carrying it out. », DE LA RUE, p. 74.

(78) CROSS, p. 338.

(79) Cf. *supra*, note 33.

favours a decision taken by one individual, while the former proposal receives the back up of the majority of the public involved in the survey. We therefore believe Crosses proposal to be more democratic (80).

C. — Restoration of damage to the environment *per se* : the base line problem

Once we have adopted a proportional restoration plan which is congruent with the principle of homeostasis, we still need to lay down a base line, *i.e.* a starting level below which the prior « pollution-free » level « re-appears » and towards which restoration will be directed in order to make the environment as viable as before the pollution occurred. In general, determining a pollution-free base line is extremely difficult, given the stochastic or uncertain nature of natural resources. Moreover, because ecosystems are dynamically changing, old baseline data may no longer be accurate at the time of the event. Thus need is felt to constantly check and renew the base line (when necessary) (81). The concept reminds us of another notion, namely that of « threshold » which equally is a « hinge » notion or a minimum-level above which any action constitutes pollution. Whereas the concept of « base line » is intrinsically linked to the physical constituency and the evolution of a natural resource, the notion of « threshold » however is external and more subjective. As a matter of fact, the latter is a threshold of human tolerance (therefore external), it reflects the local industrial situation and the extent to which society wishes to achieve environmental purity.

In order to establish a base line, one needs reliable records of preexisting environmental quality. Earlier studied methods such as the market price methodology, the travel cost analysis or the hedonistic price method can be of some help here. If reliable records are not available, one can resort to an *ex ante* CVM. Let us recall however that its use is controversial and its outcome subjective. Nonetheless, we believe that CVM provides us with indispensable indications about the pristine state of the environment. Base line data collected before and after a pollution accident, are necessary to determine exactly the results of a spill (82). With regard to chronic pollution however, one will need continuous surveillance and monitoring

(80) If different restoration actions can be potentially undertaken, the following criteria should help to choose between various alternatives : cost-effectiveness, technical feasibility, relationship of costs to benefits, additional injury caused, the recovery period,... DOI, pp. 14 and 23.

(81) One can put the base line evolution with time on a graph and obtain a baseline time path which can take diverse courses. If the resource is naturally (*i.e.* without the occurrence of pollution) in equilibrium (*i.e.* the services it provides are constant), then the baseline will be horizontal ; but it can also be naturally declining (the baseline presents a downward slope) or increasing (the baseline presents an upward slope). See for the figures, MAZOTTA Marisa, OPALUCH James and GRIGALUNAS Thomas, « Natural Resource Damage Assessment : The Role of Resource Restoration », *Natural Resources Journal*, vol. 34, 1994, p. 177 (figure 2).

(82) NOAA, p. 20.

schemes providing adequate base line information in order to be able to evaluate the gradual impact of this pollution on natural resources. In concrete terms, this means that more time, money and efforts will be required in order to draw a correct base line.

It seems logical to restore nature to the conditions prevailing before the damage occurred or to the base line level. Again, we consider that chronic pollution, residual to a legally exercised activity, imposes a different solution. As it is impossible to decree an injunction or impose cessation of a polluting activity not prohibited by law, we think it would be advisable to restore beyond original base line conditions. The justification of this proposal is linked to the fact that fighting chronic pollution requires a long-term and systematically recurring restorative action. If one restores beyond the base line, the restoration — which is *per definitio* a curative strategy — would encompass a preventive action. Indeed, the part of the restoration exceeding the prior base line conditions could preempt the pollution which would be produced as a result of the maintained polluting activity.

D. — The interaction between restoration and compensation for damage to the environment *per se* : resource based compensation

Despite our separate study of compensation and restoration in the first two chapters, it is important to underline that these two forms of reparation are often mixed and complementary. If for example the prior objective of reparation, *i.e. restitutio in integrum* or restoration, can be achieved, compensation can equally be awarded for the costs incurred prior to restoration and for the reasonable cost of assessing those damages. This is the case under the U.S. CERCLA and OPA legislation. The former costs amount to interim losses of services, *i.e.* the diminution in value of the services the harmed natural resource normally provides to the public (83) from the moment the pollution occurred till restoration commences. This interim loss

(83) It is to be noted that the initial regulation of the Department of Interior stated that the recoverable damages follow « the lesser of » rule governing the proper measure of natural resource damages. This means the « lessor of restoration or replacement cost on the one hand, or the diminution in value, on the other hand ». As the latter are generally smaller than the restoration costs, the damages awarded may not be sufficient to pay for the costs of restoration. For this reason, the States of Ohio and Colorado instituted proceedings. The Courts held that Congress intended damage assessment processes to capture *fully* all aspects of the loss, including direct and indirect injury. The Department of Interior was thus instructed to reject the lessor of rule and to consider a rule which would permit the taking into account of all reliably calculated values. Although market valuation remained a factor to be considered, option and existence values, reflecting utilities by humans for a natural resource, were also to be included. See *Ohio v United States Department of the Interior*, 880 F 2d 432 (DC Cir 1989) and *Colorado v United States v Department of the Interior*, 880 F 2d 481 (DC Cir 1989). For a detailed analysis see KENDE Christopher, « Liability for Pollution Damage and Legal Assessment of Damage to the Marine Environment », *Journal of Energy and Natural Resources Law*, vol. 11, N. 2, 1992, pp. 105-120.

is a social cost as it is a loss in welfare suffered by the public. The damages awarded though, will be entirely spent on restoration or resource enhancement activities and will not be attributed to the private individuals who faced interim loss. The reason is simple : consequential damage affecting individuals is not covered under the liability provisions of CERCLA which only apply to natural resource damage. Unfortunately, this introduces a distortion in the allocation of compensation. Therefore, promoters of the public trust doctrine — whose anthropological objective of environmental protection is to maintain the environment at the quality level determined by society and to contribute to the economic, social, cultural, and healthy well-being of all human beings (84) — raise objections against this solution. They propose to resort directly to a resource based compensation for lost interim services by the public rather than to traditional monetary based compensation.

Resource based compensation equals restoration beyond the base line level so that the additional services compensate the public for the interim losses. Hence, losses in resources over the period prior to recovery are redressed by gains in the services these resources offer over a future time period. This approach requires us to determine the resources that make the public whole and the cost of providing those resources (85). It is clear that it is more integrative as it tries to avoid the distortion in allocation and to repair efficiently the respective damages suffered by nature and the public.

In my opinion, it is what is called by economists « a first best intervention » since it remedies the problem by tackling it at its roots without creating a secondary problem, such as the distortion in allocation. Monetary compensation for interim losses, on the other hand, is a second best intervention. Furthermore, although one needs to determine the values which make the public whole, less emphasis is placed on estimating *monetary* values for resources which are often, as we saw in the first section, too difficult to express. Finally, it endorses our proposal in the context of chronic pollution to undertake restoration beyond base line level. However, at this stage the public trust approach is only a proposal.

A general remaining lacuna in contemporary environmental legislation consists thus in the failure to link the damage to the environment *per se* to its consequential damage to the individual. As a result, the individual is still denied any right of action with regard to damage to natural resources, the impact of which he or she after all also endures. We propose now, to look closer at this lacuna and to examine who can institute action for reparation on behalf of the environment.

(84) Cf. *State of Ohio* v. *United States Department of the Interior*, MAZOTTA, p. 170.
(85) *Loc. cit.*

CHAPTER II. — *LOCUS STANDI* BEFORE JUDICIARY BODIES IN THE CASE OF DAMAGE TO THE ENVIRONMENT *PER SE*

The environment is neither a subject of international law, nor a subject of national law. Therefore it will have to be represented by a recognised legal subject in each respective legal order, if reparation of the damage it suffered *per se* is to be obtained. Whereas it is quite obvious that the State will act on behalf of « its » environment in international law (I), the question who should exercise standing before judicial bodies at a transnational level is more complicated (II).

I. — *The state as a claimant before international judicial bodies*

In the present section we will look closer at the traditional international level and discover how recent cases illustrate its failure (1). Afterwards, we will examine whether transboundary pollution can justify the exercise of *actio popularis* (2).

A. — Deficiency of international law to govern inter-state environmental liability claims

On the international judicial scene, the State is the only legal subject capable of acting on behalf of the environment, as is revealed by article 34 of the Statute of the International Court of Justice. Furthermore, the State is competent and has the right to obtain reparation with regard to any good of public property affected by transboundary pollution. « *L'environnement est sous la protection du souverain dans sa sphère de compétence.* » (86) The State whose environment is damaged (hereafter, the affected State), can thus act directly on its own behalf against the polluting State (hereafter, the State of origin or emitting State) and assert itself on the basis of its territorial competence (87). It can institute proceedings, alleging a violation of the customary norm « *sic utere tuo ut alienum non laedas* » which was first announced by the Trail Smelter Arbitration and entails the international responsibility of the emitting State. The obligation of prevention (88), however, is limited by the due diligence rule — referred to in the

(86) HUGLO Christian, « La Réparation du Dommage Ecologique au Milieu Marin à Travers deux Expériences Judiciaires : les affaires 'Montedison' et 'Amoco Cadiz' », *Gazette du Palais*, 11 août 1992, p. 585.

(87) Rather than on the basis of its personal competence in favour of its nationals, which is the case when it exercises diplomatic protection. KISS Alexandre, *Droit international de l'environnement*, Paris, A. Pedone, 1989, p. 113.

(88) The duty to prevent transboundary pollution, as enshrined in Principle 21 of the Stockholm Declaration, has been reaffirmed in Principle 2 of the Rio Declaration, *Declaration of the United Nations Conference on Environment and Development* (Rio), U.N. Doc. A/CONF.151/5/REV.1. (1992).

Lac Lanoux and the *Corfu Channel* cases — which requires the emitting State only to take the necessary and practical precautionary measures (89). Exceptionally nowadays it will be able to invoke the strict liability of the emitting State-polluter if such a conventional regime is already operational between them (90).

We only have to remind ourselves of the Trail Smelter Arbitration which dragged on for 14 years to realise that in general, traditional inter-state procedures are extremely lengthy — if they take place at all. Indeed, the Chernobyl incident, for instance, where no international nor national law suit was filed against the USSR, or the Sandoz case, where the responsibility of the Swiss State (91) was carefully avoided through negotiation, clearly demonstrate that States are very reluctant to resort to legal measures of sanction as these may not be politically opportune (92). The latter cases illustrate that environmental law as soft law gives the States too strong an opportunity to evade its application when this reveals contrary to their interests.

B. — Scope for *actio popularis* to govern inter-state environmental liability claims

An interesting question is whether any State, and thus not only the directly affected State, could claim on behalf of the international community when the interests of this community as a whole are violated. In short, the question put is whether international environmental law accepts the *actio popularis* (93). It must be said that the relevance of the issue is rather recent. Whereas the traditional international order of « *cujus regio, ejus religio* » established since 1648 was only based on the pacific coexistence between its members, our contemporary structure of international law reveals the interdependence and active co-operation amongst

(89) Wolfrum Rüdriger, « Purposes and Principles of International Environmental Law », *German Yearbook of International Law*, vol. 33, 1990, p. 316.

(90) Cf. the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies. States are responsible for all national activities in outer space and liable for damage caused by objects launched into space. The 1972 Convention on International Liability for Damage Caused by Space Objects confirms that liability for damage caused on Earth by space objects is direct and absolute. See respectively *U.N.T.S.*, vol. 610, p. 205 and *U.N.T.S.*, vol. 961, p. 187.

(91) Nevertheless, the responsibility *in casu* was double, first of all, for failing to prevent the accident, secondly, for not having informed timely the other riparian States.

(92) Rest criticises this behaviour and defends the view that it would be favourable for the development of international law to resort to courts which would announce the State's obligation of reparation, since « afterwards the claimant could still renounce *ex aequo et bono* on the enforcement of his action », Rest Alfred, « Need for an International Court for the Environment ? — Underdeveloped Legal Protection for the Individual in Transnational Litigation », *Environmental Policy and Law*, vol. 24, 1994, N. 4, p. 174.

(93) Defined by Nguyen Quoc, Daillier Patrick, Pellet Alain, *Droit International Public*, Paris, Librairie Générale de Droit et de Jurisprudence, 5e éd., 1994, § 496, as « *la possibilité pour tout sujet du droit de faire établir la responsabilité de tout autre sujet qui a enfreint la légalité* ».

States. Recent international environmental instruments have underlined the necessity of an extensive co-operation among nations if one is to protect and improve the environment effectively (94). This « call for solidarity » has even intensified in the present context of transboundary pollution which often presents a regional or even global dimension (95). In short, the enhanced interdependence in the environmental field related to the fact that nature's components do not know the concept of « boundaries », explains that supporting « *actio popularis* » these days is *a priori* not utterly unfounded. Indeed, an unharmed State today can become an affected State tomorrow.

Nevertheless, the legal answer to the question is not very clear. The attitude adopted by the International Court of Justice in the *South West Africa Cases* (Ethiopia, Liberia v. South Africa) (96) was perceived as a clear rejection of the *actio popularis* : *locus standi* was declined with regard to alleged collective interests of States not directly injured. The Court acknowledged that « a right of this kind could be known to certain municipal systems of law », but rebutted that « *as its stands at present* it is not known to international law. » (97) Yet, it did not rule out any scope for evolution. Indeed, only 4 years later did the International Court of Justice recognise — in the *Barcelona Traction case* — the existence of public interests of the world community whose protection transcends mere reciprocal relations between States in the context of diplomatic protection. The following *dictum* has often been interpreted as giving scope for *actio popularis* : « by their very nature the former are the concern of all States. In view of the importance of the rights involved, all States can be held to have a legal interest in their protection ; they are obligations *erga omnes*. » (98) The Court went on, in § 34 of its decision, to determine the nature of these obligations and asserted that « such obligations derive, for example, in contemporary international law, from the outlawing of acts of aggression, and

(94) See for example, the Stockholm Declaration Preamble n° 7 and its principle 24, and principle 7 of the Rio declaration.

(95) A co-operative approach is *a fortiori* indispensable for the environmental protection of areas beyond national jurisdiction, *i.e. res communis*.

(96) The majority, in favour of *locus standi* during the first proceedings, became a minority in 1966. The Court even considered the issue of legal interest as one of merits which was perceived by the dissenting judges (7) as a violation of the principle of *res judicata*. *South West Africa cases* (Preliminary Objections), *I.C.J. Reports*, 1962, p. 319 and *I.C.J. Reports*, 1966, p. 6.

(97) *I.C.J. Reports*, 1966, p. 47. Emphasis added by the author.

(98) *Barcelona Traction, Light and Power Co. case, Belgium* v. *Spain*, *I.C.J. Reports*, 1970, § 33. The I.L.C., in its 1985 report on State Responsibility, expressed a similar idea with regard to multilateral treaties, by including, into the concept of « injured State » any other State party to the treaty if the breach is of such a nature as to prejudice the enjoyment of rights and the carrying out of obligations of the other contracting parties. Any injured State will, by consequence, be entitled — under certain conditions — to resort to countermeasures to induce defaulting States to return to lawful behaviour (provided no human rights norms are the target of these countermeasures, as this is declared strictly prohibited by art. 60 (5) of the Vienna Convention on the Law of Treaties, adopted in 1969, *I.L.M.*, vol. 8, p. 679).

of genocide, as also *from the principles and rules concerning basic rights of the human person* including protection from slavery and racial discrimination. » (99)

In our opinion, norms of environmental protection have a positive impact on the essential human rights of all individuals. The reason lies in the anthropocentric inspiration of most environmental law. If water and air are not substantially protected, human beings will not be able to survive. By consequence, if these essential environmental norms are violated, one could argue that all States concerned could resort to *actio popularis*. The analogy between environmental norms and human rights law becomes even stronger since one can consider the « right to a pure environment » as a human right with participatory, procedural and remedial aspects. Unfortunately, the analogy is only at the present moment legally endorsed with regard to serious pollution threatening peoples lives (100). This restriction is confirmed by art. 19 (3) (c) and (d) of the International Law Commission's Draft Articles on State responsibility (101) which states that « an international crime may result, *inter alia*, from : (c) a *serious* breach on a *wide-scale* of an international obligation of essential importance for safeguarding the human being and (d) a *serious* breach of an international obligation of essential importance for the safeguarding and preservation of the human environment, such as those prohibiting massive pollution of the atmosphere or of the seas. » An international crime is *per definitio* a violation of an *erga omnes* obligation : it is, according to article 19 (2), « an internationally wrongful act which results from the breach by a State of an international obligation so essential for the protection of fundamental interests of the international community that *its breach is recognised as a crime by that community as a whole.* » (102)

In the author's opinion, the reference to « seas » emphasises the importance of pollution of « common spaces » which States are more likely to pollute (chronically) than their own territory. The reference to the « atmosphere » can be interpreted as underlining a reinforced obligation of solidarity with regard to indivisible and non-exclusive natural resources since — within this context of interdependence — consideration and respect for the human environment or the environment of all human beings, including non nationals and non residents, should find its starting point on the territory of the State itself. Let us stress that even if (d) would not have been mentioned explicitly, one could have supported the view

(99) Emphasis added by the author.

(100) Rosas affirms that « cessation and not compensation should be obtained in this case », Rosas Alan, « State Responsibility and liability under civil liability regimes », *Current International Law Issues : Nordic Perspectives (Essays in Honour of Jerzy Sztucki)*, Ove Bring & Said Mahmoudi (eds), Stockholm, Norstedts Juridik, 1994, p. 170.

(101) *Y.B.I.L.C.*, 1980, II, pp. 30 *et seq.*.

(102) Emphasis added by the author.

that « protection of the *human* environment » fell under the scope of (c) relating to human rights norms. Indeed, the right to a pure environment can be regarded as a derivative of the right to life, a peremptory norm of international human rights law. Remembering the Chernobyl incident we know that the two can be intertwined when serious pollution puts a threat to the survival of the human race.

In conclusion, if the acknowledgment of *actio popularis* rightly promotes an increased protection of the global environment, it is important to underline that the grounds of this recognition will still be rooted in anthropocentrism. Indeed, its *raison d'être* would be to prevent or stop any activity seriously affecting vital human resources — article 19 refers to the air and water — and endangering our survival. However, this is inevitable if a comparison with human rights is taken as the starting point for supporting *actio popularis* since it is here an expression of anthropocentrism by an abstract national community, or « State », as a component of the global community of States and people.

II. — *The problem of* locus standi *before judiciary bodies on the transnational scene*

Locus standi is seen by the courts as a preliminary requirement for the justiciability of a case (103) and presents a question of law dealt with *in limine litis*. The issue of *locus standi* with regard to damage to the environment *per se* poses considerable problems. First of all, legal norms of environmental protection and preservation are in reality necessarily addressed to human beings, either in the form of a prohibition to damage and pollute the environment beyond a certain threshold, or in the form of an imposition of positive obligations. In this primary stage, the environment is the object of duties born by legal subjects. The counterpart of these legal duties can be considered as rights granted to the environment *in se*, for instance, the right to be restored to base line conditions after pollution occurred. Nevertheless, if its rights are violated, the environment-victim lacks the practical capacity to act on its own and regain respect.

Therefore one can correctly argue that these rights are purely theoretical (104) and useless, unless a legal representative of the environment is appointed to exercise *locus standi* on its behalf. *Via* this representation, nature ceases to being reduced to a passive object whose protection is dependent on the attitude of others : it becomes an active subject « exercising » its right to obtain reparation. One could argue that « *en matière de pol-*

(103) BRAY W., « Locus Standi in environmental law », *Comparative and International Law Journal of Southern Africa*, 1989, vol. 22., N. 1, p. 34.

(104) The representation of future generations faces similar conceptual problems. Some interstate proceedings before the I.C.J. can be interpreted in this way. For example, *Nauru* v. *Australia*, *Y.I.E.L.*, vol. 1, 1990, p. 271.

lution, le lésé ne défend pas seulement ses propres intérêts mais également ceux de la communauté à un environnement non pollué ; lorsque le lésé demande des dommages-intérêts, ceux-ci auront un effet dissuasif sur le pollueur, en conséquence si les dommage-intérêts sont élevés, il prendra davantage de précautions pour le futur. » (105) However, we are of the opinion that nature's lot cannot solely be entrusted to the injured individual who is logically more concerned with the indirect harm he suffered personally. For this reason, we underline again the need to appoint a proper legal representative of the environment, responsible for acting on the latter's behalf.

Nevertheless, choosing the legal representative of nature is not an easy task. One can in fact part in two completely different directions depending on the perception of the environment within the society where the representative is being selected. A purely anthropological approach of environmental protection will draw attention to the public who suffered from the pollution and push damage to the environment *per se* into the background. Representing the harmed community, the State will then act as claimant (A).

If, on the other hand, one acknowledges a more ecocentric approach, the most important issue will be to attribute this task to a legal person able to understand and to defend the intrinsic value of nature. The problem here remains that the exercise of *locus standi* generally requires the applicant to demonstrate that he or she has a sufficiently legally recognised interest to bring a claim, the interest being the nexus between the applicant and the merits of the case. In our second section, we will examine, who could be considered to have a legal interest in the protection of the environment and see whether contemporary (transnational and national) legislation approves of every potential candidate (B).

A. — The claimant according to the anthropological conception : the state as the legal representative of the « harmed community »

The majority view argues that « harm to the environment *per se* » consists in fact in the deprivation of the community of use or non-use services (106) and in the inconvenience the change in the environment causes to people. As a consequence, since harm to the environment equals here harm to the national community — which is embodied by the State — « the environment » is best represented by the State (107).

(105) Romy, p. 147.

(106) Barboza, Eleventh Report, § 2.

(107) Barboza, *Tenth Report on International Liability for Injurious Consequences Arising out of Acts not Prohibited by International Law*, I.L.C. 46th Session, 1994, §§ 94-100. Barboza, Eleventh Report, § 20.

This approach, advocated by Mr. Barboza, the Special Rapporteur on International Liability for Injurious Consequences Arising out of Acts Not Prohibited by International Law, reflects a pure anthropological conception of environmental protection according to which « it is difficult to understand who could be harmed by the loss of the ecological or aesthetic values of Antarctica if there were no human beings on the planet to appreciate them. Harm must always be harm to an existing legal person » (whether this be an individual or the community) ; only then, the adverse effect can become a juridical injury and leads to *locus standi*. The basic justification lies in the fact that « the effects of a causal chain normally do not come under the *aegis* of law until they are felt by a person in the legal system in question. » (108)

The theoretical explanation seems correct, but the consecutive attitude adopted remains unfortunately too literal and traditional. Indeed, the traditional conception according to which the only holders of rights are living human beings, able to represent themselves legally in person, has long been abandoned. This has been clearly illustrated by the recognition of non-traditional right holders, such as corporations, estates, municipalities and even ships (109). A corporation for instance, has a board of directors who act on its behalf and represent its interests legally.

In conclusion, within the purely anthropological approach, the environment is denied any intrinsic value and is not granted autonomous rights ; moreover, only human beings are considered potential victims of environmental pollution. Different arguments can be invoked for supporting this restrictive view. Some consider that rights only exist within a social contract as part of an exchange of duties and entitlements which necessarily implies that the environment has none (110). They allege that the idea of prosecuting the environment for causing a lethal earthquake is absurd and for the same reason, so is the idea that the environment may have rights. Others equally negate the question as to whether the environment should be a legal subject with its own rights because nature is not a moral agent and lacks the capacity of discernment of an adult human being. We can oppose that children or the mentally retarded are in the same situation and nonetheless recognised as legal subjects, the exercise of whose rights is entrusted to their legal representative.

(108) *Ibid.*, §§ 18-19.

(109) EMMENEGGER, p. 591. They benefit from rights, since the concept of « rights » is merely instrumental, *i.e.* it is a pure legal and moral instrument of protection, *op. cit.*, p. 573.

(110) Animal-rights activists claim that animals can be attributed rights since they are fundamentally alike to human beings, in that they are sentient and share the capacity to suffer.

B. — The claimant according to the ecocentric conception : the fiduciary as the legal representative of the environment's autonomous rights

As we have seen, there is no ready legal answer to the rather philosophical question whether the environment itself should receive legally recognised interests. In fact, the reply mainly hinges on the anthropological (the answer being no) or ecocentric perception of the environment within a given society. Where an ecocentric approach is adopted and the intrinsic value of nature is accepted, one notices a tendency to accept the environment as a « new » right-holder. The question then arises : who can present a claim for reparation on behalf of the environment ? So far, standing for the intrinsic interests of nature has been attributed either to the legal person exercising guardianship for nature — the State — or to « friends of nature », *i.e.* those concerned with the defence of the environment's interests (111).

(1) The State

With respect to the first case, it is obvious that the State does not act as a claimant in the capacity of the representative of the harmed community, but as a « fiduciary » of the environment (112). This idea was endorsed by the decision of the Court of Appeal in the *Patmos* Case (113). The CERCLA or « Superfund » (the same applies for OPA with regard to oil pollution) equally authorises the government to clean up hazardous waste disposal sites and allows governmental entities to recover money damages when a release of hazardous substances causes an « injury to, destruction of, or loss of natural resources. » (114) Whereas traditionally monetary assessment of the damage was carried out by the court dealing with the case (115), CERCLA has preferred to delegate this assessment to public authorities since they assume the task of trustee to the environment. This approach has been quite succesful. In short, the State here has the primary positive task to protect the different values attributable to the environment and to guarantee their restoration if their natural ability to recover

(111) EMMENEGGER, p. 591.

(112) See TRUDEAU, p. 791.

(113) « The environment must be considered as a unitary asset, separate from those of which the environment is composed (...). The right to the environment belongs to the State, in its capacity as representative of the collectivities » *(i.e.* the environment's components). Summary of the judgment of the Court of Appeal (29 November 1991), Doc. FUND/EXC.30/2, § 4.15.

(114) 42 U.S.C. § 9607 (a) (4) (C).

(115) See BARBOZA, Eleventh Report, II. Proposed Texts, § 38 (iii).

would be minimal or low (116). It is without doubt that the designation of a trustee can counterbalance the « balance » of power which is too often to the disadvantage of the environment.

(2) Environmental non-governmental organisations

Yet, the second alternative can also entail the entry on the legal scene of another group of actors — so far not well recognised in national (117) and international legislation — namely, non-governmental environmental organisations. Courts have generally been reluctant to support environmental pressure groups and have hindered any successful utilisation of the judicial (or administrative) process because they refused to extend the notion of « legal interest » required by national legislations. However, international initiatives aiming at the harmonisation of national legislations have introduced some change. The Economic Commission for Europe's Final Report of the Task Force on Responsibility and Liability regarding Transboundary Water Pollution states that non-profit-making organisations competent in environmental protection matters with an *appropriate* interest should have *locus standi* on behalf of the environment (118). It is clear that « appropriate » is more a lenient term than « strictly legal interest » which generally refers to damaged property. A similar evolution is equally supported by the Green Paper of the European Union and Barboza evokes the possibility for a State to grant or delegate its rights to take legal action to non-governmental welfare organisations (119). Equally, the recent acknowledgment within the Council of Europe Convention to allow environmental organisations to take legal action in order to obtain the cessation of an unlawful activity (injunction) and to require preventive measures to be taken, should be seen as a step in the direction of acquiring real *locus standi*, even if action for reparation has not yet been granted (120). The foregoing evolutions prove that these organisations are truly recognised to be efficient watch-dogs for the protection of the environment (121).

(116) Let us underline the contrast with the Lugano Convention which states in article 2 (8) that « internal law may indicate who will be entitled to take such measures » (*i.e.* measures of reinstatement).

(117) It should be noted that NGO's have nevertheless received the right to seek injunctive relief in the national legislation of certain European countries, such as Belgium.

(118) ECE, « Final Report... », § 7. BARBOZA, Eleventh Report, § 22.

(119) *Ibid.*, § 38.

(120) Art. 18 of the Council of Europe Convention. Their requests can only relate to urgent situations requiring a rapid and efficient intervention for which individual persons are not necessarily in a position to act. Explanatory Report of the Council of Europe Convention, §§ 80-83.

(121) Even with regard to legal action on the traditional international scene, some authors promote a liberalised access to the International Court of Justice. They accept non-governmental international organisations to act as an ombudsman for the public interest, provided an independent procedure is set up for the purpose of assessing the qualifications of these organisations. The qualification process should then be based on evidence of independence from State government influence, their truly international character, the legitimacy of the claim to represent the

This recent trend needs to be encouraged. We defend the view that the nature of the environment as a *res communis* transforms the right to claim for reparation when the environment is harmed to a putative general public right or a right belonging to the population concerned. Moreover, a public right should, in our opinion, not only be protected by the public authorities — as is universally accepted — but equally by the public itself. We value non-governmental environmental organisations of a democratic nature which base their actions on solid and truthful scientific justifications, able to truly represent the aspirations of the population.

The latter are not always met by governmental action since the public authorities often have different, or even radically opposite interests. The problem lies in the fact that the State may, just like the polluting industry, pursue general economic interests opposed to particular interests held by the affected population and defended by a non-governmental environmental organisation in the region where the polluting activity is executed. Governmental policy could thus present the danger to naturally tend towards supporting industry rather than the potentially affected population and the environment itself.

Since the general interest should not be allowed to outweigh the particular interests without justification, the emergence of non-governmental environmental organisations is a great step forward. Indeed, they can fight for a more ecocentric approach in the field of environmental protection and watch whether governmental action is well-founded and truly democratic — *i.e.* reflecting the aspirations of its electors. Additionally, they can control whether industrial activities respect the pollution threshold and finally engage in legal action when « damage to the environment *per se* » is caused. This action would without doubt exercise a dissuasive effect. There is increasing support for privatisation of environmental claims, as the unavoidable imperfections of governmental decision-making can no longer be ignored. In conclusion, providing a private remedy for natural resource damages is a social arrangement that creates an economic disincentive to harm resources.

(3) The individual

Finally, it is deplorable that the individual is not yet granted a private right of action for the recovery of natural resource damage, as is clearly illustrated in the U.S. CERCLA where governmental authorities only are

public interest and on their actual activities and membership statistics. See GARRETT Susan, « Resolving International Environmental Disputes between Private Parties and States », *Emory J. of Intern. Dispute Resolution*, 1986, vol. 1, N. 1, p. 96.

recognised as administrative trustees of the environment (122). Acknowledging rights to the individual would enable this social arrangement to come true. The right to sue is only given to the party with a legal interest in recovering compensation. Generally though, the individual is only granted a legal interest to act with regard to the damage caused to his health or private property, in other words, with regard to the harm he suffered personally and directly. Since pollution first of all affects the environment composed of elements which have not been the object of private appropriation, the individual is denied any *locus standi* to claim reparation for damage to « goods or resources of common use to the society ».

It is undeniable that the human right to a pure environment would provide the individual with an enforceable (procedural) position and could definitely promote stronger environmental protection. Today however, the right to a pure environment as such is not yet recognised on a general basis. One of the main starting problems lies in the impossibility to reach a preliminary definition of the notion « adequate », « pure » or « healthy » environment. The only instruments enshrining the right to the environment as a qualitative, independent third generation human right, are the African Charter (art. 24) and the Stockholm Declaration (art. 4). In order to circumvent this lacuna the right to a clean and healthy environment has been ranged so far under the individual's human right to life and physical integrity (art. 2 of the European Convention on Human Rights, hereafter ECHR), under the right to private life and health (art. 8 of the ECHR), or under the right to property in case of material damage (art. 1, Protocol 1 to the ECHR) (123).

In conclusion, the individual can only act on his own behalf when a human right has been violated or when he suffered loss to his person or property. Only then does he have the legal interest required to institute proceedings.

(122) In the context of the Compensation Fund established by Security Council Resolution 687/1991 and financed by 30 % of the Iraqi Oil export revenues, States and international organisations (and thus not private individuals) are the only ones entitled to file claims before the United Nations Claims Commission which administers the Fund. Its further relevance for our paper lies in the definition given to the « damage to the environment *per se* ». Damage refers here to the measures of prevention, clean-up and restoration, to those of damage assessment and monitoring of public health and to the depletion or damage to the natural resources (the list is non-exhaustive). However the Fund does not have any link with industrial pollution since it only reimburses costs incurred with regard to damage to the environment *per se* directly caused by Iraq's illegal invasion of Kuwait or occupation of the country (it excludes damage resulting from the embargo imposed *vis-à-vis* Iraq). See, Report of the Secretary General concerning paragraph 19 of Security Council Resolution 687 (1991), DOC. ONU S/22885, 1991. See also, DOC. ONU, S/AC. 26/1991/7/Rev.1. p. 8 and DOC. ONU, S/AC.26/1992/12, p. 2.

(123) For a discussion of this issue, see SHELTON Dinah, « Human Rights, Environmental Rights, and the Rights to Environment », *Stanford Journal of International Law*, vol. 28, 1991, pp. 103-138.

Conclusion

It is fair to say that « the current legal system does not represent a viable mechanism for effective protection of the environment. » (124) First of all, at the purely international level, States are unwilling to reduce their sovereignty by adopting binding international instruments : this reality reduces international environmental law to soft law (125). By consequence, it gives them too strong an opportunity to escape its application. Since the decision to engage in action lies in the State's hands, the interests of the environment *per se* are guaranteed no protection.

Regarding the transnational level, some improvements have been made : the institution of the administrative *trustee* is a clear example. However, this is insufficient to counterbalance completely the existing « balance » of power which is too often unfavourable for the environment. The reason lies in the fact that the prime objective of the current legal system is to protect the economic interests of States and the rights of humans, rather than the environment as such. Our current legal system reflects species chauvinism and the environment will be protected to the extent this is in our interest. The refusal to recognise the intrinsic value of the environment is a perfect illustration. The general use of the market price methodology for the assessment of the damage caused to natural resources also reflects that the environment is protected for economic interests only. As a consequence, non-economic damage will be repaired to the extent it is covered in a restoration process.

It is self-evident that if the legal liability system is deficient with regard to reparation of the damage to the environment *per se*, it will equally fail to have a preventive impact. Furthermore, the potential actors which could guarantee this effect, such as environmental NGO's or the individual, do not have extensive competences in this respect. For this reason, we encourage legislative changes allowing NGO's to file claims for compensation (126), or instituting a human right to an adequate and healthy environment.

(124) Wolfrum, p. 317. On the anthropological focus of environmental law, see also Bray, p. 33 ; Garrett, p. 92 ; Emmenegger, p. 552.

(125) The problem is that the only possible limitations on the States sovereignty are — as the Permanent Court of International Justice affirmed in the *Lotus* case — to be imposed by international law, the legislators of which are the same States. The Lotus case clearly illustrated that limitations upon the sovereignty of States depended upon the existence of primary rules of obligations which were to be proven and not to be presumed. The Tribunal in the *Lac Lanoux case* later confirmed this theory, « *La souveraineté territoriale joue à la manière d'une présomption. Elle doit fléchir devant toutes les obligations internationales, quelle qu'en soit la source, mais elle ne fléchit que devant elles.* », *Lotus* Case, *P.C.J.I. Reports*, 1927, Ser. A, n° 10 ; *Lac Lanoux* Arbitration, 1957, *Spain* v. *France*, *R.I.A.A.*, XII, p. 301.

(126) Although this is already accepted in some national legislations, the Council of Europe Convention only allows urgent action demanding an injunction.

Unfortunately, reality reflects that if the pollution of the river does not harm the fisherman, humans will not care. If we want to protect the environment efficiently, we have to consider it as an equal actor and pursue an equitable balance of interests during negotiation. This approach is promoted by a new doctrine called biocentrism (127) which assesses the validity of human action with an impact on nature by taking into account two rival interests instead of a dominant and a subordinate one : thus the question becomes one of truly balancing interests without any of them prevailing *a priori* (128). The solution of a conflict of interests will vary since a case to case study is required. For example, « a decision affecting the protection of whales will not use the same interests as balancing factors as would a decision affecting a deadly virus. » (129)

Given the fact that the environmental rules have greatly privileged human and State interests in the past, nature should be granted the right to catch up with them. For that purpose, we could create a positive presumption in its favour and shift the burden to prove the outweighing interest to the human being or the State. Restoration beyond the baseline equally promotes the interests of the environment *per se*.

Environmentalism is without doubt bound to be the major political, economic and social issue of the 21st century (130). At the moment « this cause commands the type of grass-roots support around the planet which few other ideas have evoked in the long history of Mankind and has achieved the status of philosophy few would dare to challenge or to oppose. » (131) The Stockholm and Rio Declarations reveal that environmentalism is universally accepted as a new ethic. Recently elaborated concepts such as ecosystem, sustainable development and biocentrism reflect a gradual mentality change. If this evolution in environmental law is

(127) Biocentrism is limited to living beings, whereas physiocentrism extends to every natural entity and compound.

(128) EMMENEGGER, p. 581. In ecocentrism, on the contrary, harmony of humans and nature is paramount and any planned disturbance of this natural harmony is prohibited. *Ibid.*, p. 591.

(129) In a conflict of interests between whales and humans, we must consider the whale's right to exist as a species, including their right to live according to their natural disposition (sufficient room to swim, eat, procreate without interference of whale watcher boats), and their right to avoid painful loss of family members. We must take into account humankind's right to survival, including the right to live according to its natural disposition (hunting) and its right to pursue an economic activity (living of hunting). If in such a case the facts show that a certain whale species is on the verge of extinction, that the killing of a whale will cause great pain among his community, and that human survival is neither threatened by a ban on the specific whale species nor is there a lack of alternative hunting grounds, the balancing process leads to a vested right of the named whale species against whale hunting. *Ibid.*, p. 585.

(130) Cf. HOMER-DIXON Thomas, « Environmental Change and Violent Conflict », *Scientific American*, February 1993, pp. 16-23. This article warns that growing scarcities of renewable resources can contribute to social instability and civil strife.

(131) KHOOSIE LAL PANJABI Ranee, « From Stockholm to Rio », *Denver Journal of International Law and Policy*, 1993, vol. 21, N. 2, p. 215.

furthermore supported by the world community (132), the principles enshrined in these declarations will be real precursors of « binding law » — as opposed to soft law — and will take stronger roots.

For the moment, the moral price of killing the environment remains with us. Only when environmental activists will have succeeded in changing enough minds and in evoking sufficient public support, will democratic governments have to follow. Indeed, establishing true democracy does not only refer to free and fair elections, it also implies that the elected represent the true aspirations of the electors. The first step to take is to enable individuals to have access to truthful, clear and transparent information, only then will they be able to make a real decision. If they empower themselves, they should act accordingly and reduce any polluting behaviour, such as driving cars. Equally, industry should no longer be allowed to dissimulate the real extent of the pollution caused in order to be able to operate undisturbed.

In fact, it is not only the task of the media to awaken consciousness, we are all citizens of the world and thus ultimately responsible. « Once we acknowledge that the interest of humans is not congruent with the interest of nature as a whole, anthropocentrism is too limited a world view to grasp the new reality » (133) and biocentrism where humans are part of nature and not anymore apart from nature, appears on the scene. Finally, let us recall the old words of wisdom of Chief Seattle, « *This we know : the earth does not belong to man : man belongs to the earth... Whatever befalls the earth, befalls the sons of the earth. Man did not weave the web of life : he is merely a strand in it. Whatever he does to the web, he does to himself.* » (134)

(132) See Mc CAFFREY for whom International law is « a decentralised system which relies for its enforcement principally on self-help (within certain limits) and the opinion of the world community », Mc CAFFREY Stephen, « Chapter 8. Water, politics and international law », in GLEICK Peter, *Water in Crisis : A Guide to the World's Fresh Water Resources*, New York, Oxford, Oxford University Press, 1993, p. 97.

(133) EMMENEGGER, p. 571.

(134) Letter from Chief Seattle, patriarch of the Duwamish and Squamish Indians of Puget Sound, to U.S. President Franklin Pierce (1855). Although the letter appears in numerous anthologies, the original has never been located.