TRENDS IN ENVIRONMENTAL POLICY AND LAW

TENDANCES ACTUELLES DE LA POLITIQUE ET DU DROIT DE L'ENVIRONNEMENT

Project Coordinator
Coordinateur du projet
Michael Bothe

International Union
for Conservation of Nature and Natural Resources
Gland, Switzerland
1980
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PREFACE

Law follows society's trends, and as societies have developed so have their laws concerning their natural resources. Already in previous centuries, legislation was enacted to protect forests, provide for protected areas and conserve water resources. In more recent years, legal provisions have been extended to conserving the ocean's resources, protecting the ozone layer and for hazardous wastes management. Developments in technology drive developments in environmental law. Eventually patterns of legal responses to societies' environmental concerns emerge. These may fairly be called trends in environmental law.

Because societies differ in their cultural, political and legal traditions it is not possible simply to transplant an environmental law from one country to another. With the exception of federal countries and States with identical legal traditions, it is also not possible to draft model legislation that can regulate similar environmental problems in different jurisdictions.

One can, however, examine trends in environmental law in order to determine the constellation of issues to be resolved for a particular environmental problem - or galaxy of problems - and the alternative substantive and procedural approaches for resolving them. On the basis of such an examination one can develop guidelines for coherent policy decisions for managing the problems. These decisions must be made by those attempting to devise a system of legal management as well as those seeking to improve an existing one. They should be based in part on the relevant experiences of others who have faced and tried to solve similar problems.

In this volume several - though by no means all - trends in environmental law are described and analysed. The creation of this work was encouraged by the success of a speech in 1976 on the subject. Since then, relevant information has been collected at the Environmental Law Centre, a project coordinator named, and appropriate authors have been found to prepare contributions. The process was a long and difficult one to finance, and for this reason, special thanks is owed to the Fund for Environmental Studies for its support throughout the history of the project, and to the World Wildlife Fund for its backing in the final period.

This work is especially timely since the Eighth Governing Council of the United Nations Environment Programme in April 1980 has called for the convocation in the Autumn of 1981 of a meeting of senior government officials expert in environmental law to assist in identifying appropriate subject areas and setting out a programme in the field. The Governing Council also requested the Executive Director of UNEP to prepare necessary documentation, noting inter alia relevant material published by leading authors. This publication should consequently prove helpful to this end.
It is hoped that this volume will be followed by another, tracing additional trends. Reaction to this present work would consequently be most appreciated; especially interesting would be views as to the future global applicability of the trend concepts cited. Now, it only remains to welcome the reader to an interesting collection of essays and to thank all those - from the coordinator, authors and editors to printers and proofreaders - who made it possible.

Wolfgang E. Burhenne
PREFACE


Il n'est pas possible, cependant, de prendre tel quel le droit de l'environnement en vigueur dans un pays et de le transplanter dans un autre, en raison des différences qui existent dans les traditions culturelles, politiques et juridiques des sociétés humaines. A l'exception du cas des Etats fédéraux, ou encore de celui des Etats dont les traditions juridiques sont identiques, il n'est pas non plus possible d'établir une législation modèle capable de résoudre des problèmes d'environnement semblables dans des unités territoriales relevant d'Etats différents; mais ce qui est possible, par contre, c'est d'étudier les tendances de l'évolution du droit de l'environnement et, ce faisant, d'identifier les myriades de problèmes de toutes sortes que pose la protection de l'environnement et les différentes options qui s'offrent à nous pour les résoudre, tant du point de vue de fond que de la procédure. Cela fait, il deviendra possible d'élaborer des lignes directrices permettant de prendre des décisions de politique générale cohérentes et de réduire ainsi l'ampleur de ces problèmes. C'est à ceux qui s'efforcent de mettre sur pied un système juridique de gestion de l'environnement, ou qui cherchent à améliorer un système existant, qu'il appartiendra, enfin, de prendre les décisions nécessaires. Pour ce faire, ils pourront utilement se fonder, au moins partiellement, sur l'expérience de ceux qui ont déjà du affronter et essayer de résoudre des problèmes de même nature.

Cet ouvrage se propose de décrire et d'analyser certaines des tendances actuelles du droit de l'environnement mais non point toutes, loin de là. Sa rédaction a été encouragée par le succès d'un discours prononcé en 1976 dont le sujet était précisément celui-là. Depuis lors le Centre du Droit de l'environnement s'est mis à rassembler les informations nécessaires, un coordinateur du projet a été nommé et des auteurs compétents dans les sujets traités ont été pressentis pour rédiger les différents articles de ce recueil. Il a fallu ensuite trouver les fonds indispensables à la réalisation de ce projet, ce qui fut long et difficile. Nous sommes, à cet égard, tout particulièrement reconnaissants envers le Fonds pour l'étude de l'environnement pour l'appui qu'il a apporté au projet du début à la fin et au Fonds mondial pour la nature pour son soutien pendant sa phase finale.

Ce recueil vient particulièrement à propos puisque le conseil d'administration du programme des Nations Unies pour l'environnement, à sa huitième session en avril 1980, a décidé de convoquer en automne 1981 un réunion de hauts fonctionnaires, experts en droit de l'environnement, pour l'aider à identifier des domaines d'intérêt appropriés et à élaborer un programme sur ce sujet. Le conseil
d'administration a également demandé au Directeur exécutif du PNUE de pré-
parer la documentation nécessaire à ces fins et de tenir compte, à cet effet, de
tout ouvrage déjà publié sur la question par des auteurs faisant autorité dans ce
domaine. Cette publication pourrait, à cet égard, avoir, en conséquence, une
certaine utilité.

Nous espérons que ce recueil sera suivi d'un second qui permettra d'identifier
d'autres tendances. C'est pourquoi nous serions particulièrement heureux de
connaître les réactions des lecteurs du présent ouvrage et notamment leur
opinion sur la mesure dans laquelle la notion de "tendances", telle que nous
l'entendons ici, pourrait se prêter, dans l'avenir, à une application globale. Il
nous reste encore à souhaiter la bienvenue aux lecteurs de cette intéressante série
d'articles et à remercier tous ceux, coordinateurs, auteurs, éditeurs, imprimeurs
et correcteurs d'épreuves, qui ont fait de cet ouvrage une réalité.

Wolfgang E. Burhenne
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Supp. = Supplement
Suppl. = Supplement
S.W. = South Western Reporter
T. corr. = Tribunal correctionnel
T.C.P.A. = Town and Country Planning Act
UICN = Union internationale pour la conservation de la nature et de ses resources
UK = United Kingdom
UN = United Nations
UNCLOS = United Nation Conference on the Law of the Sea
UNCTAD = United Nations Conference on Trade and Development
UNEP = United Nations Environment Program
UNESCO = United Nations Educational, Scientific and Cultural Organization
UNIDO = United Nations Industrial Development Organization
UNITAR = United Nations Institute for Training and Research
UNRIAA = United Nations Reports on International Arbitral Awards
UNTS = United Nations Treaty Series
U.S. = United States Reports
USSR = Union of Soviet Socialist Republics
V. = versus
WHO = World Health Organization
Wis. = Wisconsin Reporter
W.L.R. = Weekly Law Reports
WM = Wertpapier-Mitteilungen
WMO = World Meteorological Organization
WR = Weekly Reports
Yale L.J. = Yale Law Journal
ZaöRV = Zeitschrift für ausländisches öffentliches Recht und Völkerrecht
ZEP = Zone d'environnement protégé
INTRODUCTION

"How can we conserve our environment?" This question is posed throughout the world. In reply, a number of political, economic and legal tools and techniques, of administrative and judicial procedures have been used, developed or invented. Some of these tools relate to international problems; others are used in the internal sphere of states and deal with problems which are common to many countries. As the problems are common, it may be quite natural that the tools and techniques used to cope with them are also similar, and that states learn from each other.

It is the purpose of this volume to present and describe some of these tools and techniques. This publication does not intend to, and indeed cannot give a comprehensive overview of environmental policy and law around the world. But some elements have been singled out and are described herein, as a rule on a comparative basis.

The contribution by Steiger, Demel, Fey and Malanczuk deals with a fundamental problem of constitutional law and policy: is there or should there be an individual right, enforceable against the State, for a decent environment in which to live? The contribution by Dolzer puts the constitutional question in the opposite direction: how far do environmental considerations limit individual rights and, in particular, the right to property?

The next two contributions deal with economic aspects of environmental protection. Who should bear the costs of environmental conservation: the community at large or the polluter? Hansmeyer deals with the pros and cons of the polluter-pays and common burden principles. De Kock analyses financial incentives granted by the State for environmental protection in private industry.

A further set of contributions is concerned with basic issues of the administrative decision-making process and the review of decisions relating to the environment: Kiss analyses notification and licensing as methods of preventive control of activities affecting the environment, Wandesfoerde-Smith the famous and much discussed environmental impact assessment, and Gündling public participation in the environmentally relevant decision-making process.

Environmental protection is to a significant degree a question of using a resource which is becoming increasingly scarce on earth: space. In this context, the paper by Garner addresses the issues of environmental protection and land use planning, while de Klemm devotes his contribution to an important means of preserving certain biotopes, i.e. the creation of eco-reserves. Another set of problems concerns materials which present particular dangers for the environment. This aspect is covered by the articles by Rehbinder on environmental chemicals and Forster on solid waste disposal and recycling.

Prevention, however, is not always successful; if damage has been done to the environment, difficult questions of liability arise. This problem is presented by Lummert as to civil and by Delmas-Marty as to criminal liability.
A final set of contributions (among which, however, the articles by de Klemm and Kiss have to be counted as well) deal with the international dimension of environmental conservation. The article by Rahmatullah Khan destroys the myth that redeployment of industries is or might be based on the assumption that lower environmental standards offer a competitive advantage for industrial siting in developing countries. The international scope of environmental problems often requires the setting of international standards of protection and use (Sand). Fleischer and Riphagen deal with (and critically question) two fundamental concepts of international environmental protection: the notions of "common heritage of mankind" and "shared natural resources". Dupuy deals with the issues of liability in an international perspective. The concluding paper by the coordinator describes some of the procedural issues involved in the attempts to deal with environmental problems where (diverging or common) interests of two or more States are involved.

The reports could not always be based upon a world-wide comprehensive comparative study, but some national experiences chosen by the individual authors have been singled out. Often, however, some general conclusions emerge from the experiences described.

The subjects were chosen on the assumption that they constitute "Trends" in the sense that there is a growing tendency to use a particular tool of environmental policy and law. The authors, however, were not always of that view. In addition, the analysis sometimes criticizes and considers insufficient tools and techniques which have been of widespread use. Thus, these tools and techniques are not necessarily recommended for imitation.

This is not the only reason why this volume has refrained from formulating any specific recommendations for legislative action. Tools of environmental policy must fit into a national framework, a national social and legal order. There, the surrounding circumstances differ considerably and thus, specific recommendations would not be appropriate. It is hoped, however, that the conclusions and suggestions contained in the various contributions are useful to environmental decision-makers. Indeed, this volume tries to be helpful for those involved in environmental policy questions if not by giving precise recommendations, then by providing additional information. It is therefore not meant as a purely academic exercise of description and analysis and hence is not in the first place addressed to the scientific, academic community. Rather it is meant for decision-makers, and for all those concerned with environmental policy in different walks of life. Most contributions contain extensive footnotes referring to further materials, thereby enabling those wanting to go deeper into any subject to find the necessary sources for further information.

As this common endeavour to present a series of environmental issues to the reader has come to an end, the co-ordinator wishes to thank all those who have worked with him. The concept of the work was the result of a co-operative effort by a board of advisers. Their highly competent counsel has been greatly appreciated. My heart-felt thanks go to the authors for all their work, and for the patience and comprehension they have shown towards me. I should like to stress that the content of the individual contributions have remained their responsibility, and that consequently all praise should be placed on them. Both
the authors who have not written in their mother tongue and the co-ordinator are indebted to the team of linguistic revisers, Messrs. Humphrey Hill, London, Robert Hollweg and Kevin Madders, Heidelberg. Without their patient work, this publication would not have been possible. I am also grateful to my assistant, Mr. Horst Stille, for his technical work on the manuscript. The bulk of the technical, but also a great deal of the conceptual work was in the hands of the staff of the IUCN Environmental Law Center in Bonn, lead and motivated by Dr. Francoise Burhenne-Guilmin. I shall not forget this most fruitful and efficient co-operation.

Hannover, May 1980

Michael Bothe
INTRODUCTION

"Comment préserver notre environnement? " C'est une question qui se pose dans le monde entier. Pour y répondre, de nombreux instruments et des techniques variées ont été inventés, élaborés, utilisés dans les domaines politique, économique et juridique ainsi que dans celui des procédures administratives et judiciaires. Certains de ces instruments ont pour objet la solution de problèmes internationaux; d'autres sont utilisés dans les domaines qui relèvent de la compétence intérieure des États et ont pour but de résoudre des problèmes qui sont communs à un grand nombre de pays. Il paraît donc naturel, s'agissant de problème communs, que les instruments et techniques utilisés pour les affronter soient très semblables les uns aux autres et que les États puissent ainsi bénéficier de leur expérience mutuelle.

L'objet de cet ouvrage est de présenter et de décrire certains de ces instruments et certaines de ces techniques. Il n'est, évidemment pas possible, et ce n'est d'ailleurs pas le propos de ce recueil, de passer en revue d'une manière exhaustive la politique et le droit de l'environnement de tous les pays du monde. Seuls donc certains aspects de ces politiques et de ces droits seront examinés ici. Cet examen se fera, en règle générale, en utilisant la méthode du droit comparé.

L'article de MM. Steiger, Demel, Fey et Malanczuk traite d'un problème fondamental de politique et de droit constitutionnels, à savoir: existe-t-il ou devrait-il exister un droit individuel, opposable à l'État, à un environnement de qualité pour la vie de l'homme? La contribution de M. Dolzer examine le même problème constitutionnel, mais en en inversant les termes. En effet, l'auteur se demande dans quelle mesure les considérations relatives à la défense de l'environnement limitent-elles les droits de l'individu et en particulier, le droit de propriété.

Les deux articles suivants abordent les aspects économiques de la protection de l'environnement. La question, en effet, se pose de savoir qui doit supporter les coûts des mesures de préservation: la collectivité dans son ensemble ou le pollueur? M. Hansmeyer considère les avantages et les inconvénients respectifs de l'application des principes "pollueur-payeur" et "charges collectives", tandis que Mme de Kock analyse les systèmes d'incitations financières consenties par l'État en faveur des industries privées pour la défense de l'environnement.

Le recueil contient ensuite plusieurs contributions qui traitent des problèmes fondamentaux posés par le processus de prise de décisions par les autorités administratives et par les recours contre les décisions qui affectent l'environnement. C'est ainsi que M. Kiss analyse les procédures de notification et d'octroi de licences utilisées comme moyen de contrôle préventif des activités portant atteinte à l'environnement, que M. Wandesforde-Smith examine les procédures bien connues et abondamment discutées d'étude d'impact sur l'environnement, et que M. Gündling considère la question de la participation du public à la prise de décisions qui concernent l'environnement.

Dans une très grande mesure, la protection de l'environnement revient à résoudre le problème de l'usage d'une ressource qui devient de plus en plus rare sur
notre terre: l'espace. L'article de M. Garner aborde cette question du point de vue de la planification de l'utilisation des sols et celui de M. de Klemm sous l'aspect de la création de réserves écologiques qui constitue un moyen important de préservation de certains biotopes. Une autre série de problèmes se rapporte à l'usage de certaines substances qui sont particulièrement dangereuses pour l'environnement. Ces problèmes sont traités par M. Rehbinder pour les produits chimiques et par M. Forster pour l'élimination des déchets solides et le recyclage.

La prévention, cependant, n'est pas toujours suffisante; en effet, lorsque des dommages ont été causés à l'environnement il faut ensuite régler la question difficile de la responsabilité. M. Lummert aborde ce problème sous l'aspect de la responsabilité civile et Mme Delmas-Martysous celui de la responsabilité pénale.

Le dernier groupe d'articles (dans lequel il faudrait d'ailleurs aussi ranger ceux de MM. de Klemm et Kiss) traite de la conservation de l'environnement du point de vue international. La contribution de M. Rahmatullah Khan détruit le mythe selon lequel le redéploiement industriel s'appuie, ou pourrait s'appuyer, sur l'hypothèse que l'existence, dans les pays en voie de développement, de règles de défense de l'environnement moins sévères donne aux industries qui s'implantent dans ces pays un avantage sur leurs concurrents. La dimension internationale des problèmes d'environnement nécessite souvent l'établissement de normes internationales de protection et d'usage (article de M. Sand). MM. Fleischer et Ripplenberg examinent et mettent sérieusement en cause deux concepts fondamentaux de la protection internationale de l'environnement: la notion de "patrimoine commun de l'humanité" et celle de "ressources naturelles partagées". M. Dupuy, enfin, traite des problèmes de responsabilité dans une perspective internationale. Dans sa conclusion, le coordinateur de cet ouvrage énumère certain des problèmes de procédure posés par le contentieux de la défense de l'environnement lorsque les intérêts (communs ou opposés) de deux ou plusieurs Etats sont en cause.

Il n'a évidemment pas toujours été possible de procéder, dans chacun des articles qui composent ce recueil, à une étude de droit comparé complète à l'échelle mondiale. En revanche, certaines expériences nationales, choisies par les auteurs, ont fait l'objet d'un traitement approfondi. Des conclusions générales ressortent souvent d'ailleurs de la description de ces situations particulièrement.

Les sujets des différentes contributions ont été sélectionnés parce que l'on a estimé qu'ils constituaient des "Tendances", dans la mesure où certains instruments particuliers de la politique ou du droit de l'environnement sont maintenant utilisés de plus en plus fréquemment. Les auteurs n'ont pas, toutefois, toujours partagé cette opinion. En outre, leur analyse a souvent porté à la critique ou encore à souligner les insuffisances d'instruments ou de techniques dont l'usage est pourtant fort répandu, mais qui ne peuvent, en conséquence, être recommandés comme modèles.

Telle n'est pas d'ailleurs la seule raison pour laquelle cet ouvrage évite, à dessein, de formuler des recommandations précises à des fins législatives. En effet, les instruments d'une politique de l'environnement doivent trouver leur place dans un cadre, c'est à dire un ordre juridique et social, national, mais les conditions particulières des différents pays peuvent être tellement différentes que des recommandations spécifiques seraient tout à fait inappropriées. Il faut espérer,
cependant, que les conclusions et les suggestions contenues dans les articles qui font partie de cet ouvrage se révèleront utiles pour ceux qui prennent des décisions affectant l'environnement, car le but de ce volume est précisément d'essayer de venir en aide à ceux qui ont à résoudre des problèmes de politique de l'environnement en mettant à leur disposition des informations que ne leur sont peut-être pas disponibles plutôt qu'en leur soumettant des recommandations précises. Il ne s'agit donc pas d'un exercice purement académique de description et d'analyse s'adressant avant tout à la communauté scientifique ou universitaire, mais bien d'un ouvrage destiné à ceux qui prennent les décisions et à tous ceux qui sont concernés par la politique de l'environnement quelle que soit leur activité professionnelle. La majorité des articles de ce recueil sont accompagnés de nombreuses notes renvoyant à d'autres ouvrages, permettant ainsi aux lecteurs qui désirent étudier plus avant les sujets qui y sont traités d'accéder aux sources qui leur permettront de le faire.

Au terme de cette entreprise collective de présentation de problèmes relatifs à l'environnement, le coordinateur souhaite remercier tous ceux qui ont collaboré avec lui. La façon dont ce ouvrage a été conçu est le fruit de la coopération d'un groupe consultatif dont la haute compétence a été particulièrement appréciée. Mes remerciements les plus chaleureux vont avant tout aux auteurs pour tout le travail qu'ils ont accompli et pour la patience et compréhension dont ils ont fait preuve à mon égard. Je voudrais, cependant, souligner que la responsabilité du contenu des différents articles appartient à leurs auteurs à qui reviennent donc de droit les louanges qu'ils méritent. Les auteurs qui ont écrit dans une langue qui n'est pas leur langue maternelle, ainsi que le coordinateur, expriment leur reconnaissance envers l'équipe de réviseurs linguistiques, M. Humphrey Hill de Londres et MM. Robert Hollweg et Kevin Madders de Heidelberg. Sans leur patient travail cette publication aurait été impossible. Mes remerciements vont également à mon assistant M. Horst Stille pour le travail technique qu'il a accompli sur le manuscrit. La plus grosse partie du travail technique ainsi qu'une part importante du travail de conception de cet ouvrage ont été effectués par les collaborateurs du Centre du droit de l'environnement de l'UICN à Bonn sous la direction et l'inspiration de Mme Françoise Burhenne-Guilmin. Je n'oublierai jamais leur coopération efficace et fructueuse.

Hannover, mai 1980

Michael Bothe
The Fundamental Right to a Decent Environment

by Heinhard Steiger, Bruno Demel, Hans-Georg Fey, Peter Malanczuk

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I. General

1. Subject and approach

a. Environmental policy is in the general interest of the inhabitants of a state as well as in each individual's interest and, increasingly, also in the world's interest. A healthy and humane environment worth living in is essential to the physical and psychical existence of every citizen. This opinion, which our studies have shown to be shared by all States throughout the world, expresses itself also in
the legal rules of the different states. Principle 1 of the Stockholm U.N. Conference is an example of this common opinion: "Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality which permits a life of dignity and well-being ....". The environment of the individual as a rule is indirectly protected when the environment in general is protected. However, the individual's particular environment can also be legally protected in a direct manner through legal protection aimed at the individual and his interests and needs. In a factual sense the individual's particular environment means the environment in which the individual lives and exists. This environment can, of course, change since the individual is mobile. But, in any case, it is the environment with which he is directly interacting. This environment is functionally defined by the functions it provides for human beings to secure and fulfill their fundamental, inevitable and necessary existential requirements and interests of both a biological and psychological nature. This functional relation between human beings and environment needs to be legally protected. In order to achieve this goal, environment quality has to be secured and guaranteed to a degree that will make it possible for the function of the environment with regard to human beings to be fulfilled. This paper intends to examine the extent to which trends in this direction already can be identified in the existing law of the various States and also the extent to which such trends are reflected in recent drafts and proposals for new laws.

b. The environmental law of the different States is extensively divided and subdivided. It is incorporated in numerous legal regulations, but it is possible to distinguish between two levels, the constitutional level and the level of the so-called ordinary legislation. This distinction is necessary for two reasons. First of all, not every state has already passed at the present time environmental legal rules at the level of constitutional law and thus in these States the protection of the legal position of the individual is only guaranteed by ordinary legislation. Secondly, one has to consider that even the states whose constitutions contain provisions in favour of the individual's environment have to enforce such provisions and to put them in concrete form by means of ordinary legislation. Part II of the following describes the constitutional level; Part III deals with the subject at the level of ordinary legislation and Part IV, finally, gives a summary in the form of some theses.

2. Definition of terms

a. A definition of terms may explain the subject of our exposition more precisely. We have attempted to find a common basis for the variety of solutions practised by the different states to secure under the law the environmental interests of the individual.

b. As far as the individual enjoys guarantees of law with regard to his environment, the legal relevance of such provisions depends upon the position they have within the entire legal system and in the particular statute.

The so-called "subjective rights" are in this context the most extensive form of protection. Such a subjective right grants a legal claim to the individual to have his interests in a decent environment respected, a claim he can enforce by legal procedure (and with legal protection by the courts or equivalent institutions).
The claim may fulfill two different functions:

1. the function of defense (Abwehrfunktion) is the right of the individual to defend himself against an interference with his environment which is to his disadvantage;

2. the function of performance (Leistungsfunktion) is the right of the individual to demand the performance of an act in order to preserve, to restore or to improve his environment.

The subjective rights are divided into two groups according to their legal guarantee: the fundamental rights at the constitutional level and the ordinary rights on the level of ordinary legislation. Fundamental rights are of essential importance for the constitutional and legal order. They prevail over other legal positions, are invested with special legal guarantees, and are only subordinate to such interests and needs which are guaranteed an equal or even stronger protection. Fundamental rights, however, are in most cases relatively vague, general and indefinite in their content and meaning. This is less applicable to rights of defense (in their traditional liberal sense) but is of relevance for rights to performance and for social rights.

Before the latter rights can become effective, they generally must first be incorporated in a law which will make the particular claim more precise by determining its prerequisites, conditions, and scope of application.

Ordinary subjective rights below the constitutional level enjoy less legal protection than constitutional subjective rights. It is less difficult to derogate from or even to abolish such rights. While the legislative body as a rule is bound by the basic rights, the ordinary subjective rights are generally subject to change by that body. On the other hand, compared with the fundamental rights the subjective rights granted by ordinary legislation are as a rule far more precise. This very precision, of course, confines the scope of legal guarantees. As mentioned above, the ordinary rights often put general fundamental rights into concrete terms in regard to very specific subject areas.

The question of enforcement is essential to the legal protection of the individual's environment. Ordinarily, protection through judicial review is desirable. However, rights to participate in administrative proceedings or to initiate the review of administrative decisions by higher administrative authorities are also possibilities for the enforcement of the law. As a rule such rights exist in one form or another in every state. But their definition is not always clear and distinct. They may be provided alternatively or cumulatively; they may overlap or be linked with one another in a certain manner. The decisive point is that the individual has legally guaranteed access to a procedure, if possible before independent and neutral authorities, in which the citizen is able to claim his rights and to achieve a decision based upon objective considerations. This claim to access is itself a subjective procedural right. The substantive law in favour of the interests of the individual does not in all cases provide such possibilities of legal protection and of enforcement of the law.

In the strict sense such provisions cannot be regarded as subjective rights. They are often only legally-structured fundamental principles and guidelines (Maß-
gabenormen) which determine in a binding manner the scope and the limits of state activity with regards to the protection, the safeguarding and under certain circumstances also the development of the environment of the individual. Thus they are somewhat similar to the so-called state policy guidelines (Staatsaufgabenbestimmungen or Staatszielbestimmungen).

c. The legal system of a state is often content to impose an objective obligation upon the state authorities to protect the environment and to take care that detrimentally affected environmental situations are restored. It may require an improvement of the environment in general or in special fields. In these cases the norms are state policy guidelines in an objective legal sense. As a rule the obligation is stipulated on behalf of the general public interest of the society. The state authorities and, above all, the legislature are supposed to make these guidelines more specific and put them into practice. As already mentioned above, they may, however, also relate to the environmental interests of the individual without granting a subjective right to demand any action from the legislative body.

Thus, there are intermediate forms, which lie between these two major instruments for the protection of the environment of the individual. This is true especially if services and positive actions of the government are necessary. At some point of the legal spectrum, difficult to define, however, fundamental rights and state policy guidelines come together. As a criterion for distinguishing between fundamental rights and state guidelines, the difference between the primary function and the secondary function of a norm appears to be useful. If the individual is primarily addressed as the subject of the provision, then that provision is a social fundamental right, even though it may need to be put into a more concrete form.

If the norm or legal rule primarily is concerned with the allocation of functions or duties and only secondarily secures the interests of the individual, then it is a state policy guideline. A criterium for distinguishing between fundamental rights and state policy guidelines may also be the possibility of access to judicial enforcement of the law.

Ordinarily the implementation of state policy guidelines or state functions belongs to the legislature and the state authorities and is thus an important and in the initial stage a political activity. The influence of the individual in this context is normally restricted to participating in the political process, for example by voting or exercising other political rights. But this does not mean that there is no judicial control at all. Such a control may be insured through objective procedures which lead to the objective scrutiny of the acts of the legislature and other state authorities in terms of the constitution and also the state policy guidelines and state functions. If the occasion arises, incidental controls are also possible. Naturally, it depends on the legal system of the state whether there is judicial review of the constitutionality of state action, and in particular of legislative acts.

d. There is no doubt that "environment" is a multi-faceted, almost shapeless notion, especially in relation to "environmental law" and the protection of the environment of mankind. In the different states this term is given a widely varying content and scope.
Different meanings of "environment" are to be found on the international level as well. The Declaration of Stockholm understands "environment" in a more comprehensive sense than the Action Programme of the European Communities. This is caused by the very differing conditions relating to the existence of a society and of the individual. Life and health of the individual are the reference points although nature itself has its own right to exist and deserves protection for its own sake. One is able to discern a core area which includes the fundamental natural conditions of life and health. The air, the water, the ground with fauna and flora form part of that area that must be protected against pollution or destruction or must be restored, as the case may be. This core is surrounded by a first circle describing the protection against effects caused by human beings but transmitted by natural mediums to human beings such as rays, noise, and vibrations. A second circle represents the securing of the social environment, above all the securing of healthy and decent accommodation and places of work as well as of facilities for convalescence and recreation. A third circle describes the protection of foodstuffs and stimulants and consumer protection against substances with direct effects to humans, especially medicaments, drugs, chemicals and similar products. This, however, should be the limit. The development of an economic environment and in consequence the general economic development, including the creation of employment opportunities, but also the improvement of educational offerings, etc., do not belong to the notion of "environment" maintained in this paper although it cannot be denied that these are, of course, elements adding to the quality of life. The distinction is, admittedly, not always easy, but these elements are much more far-reaching than the direct protection of life and health. It has further to be noted that conflicts may arise between these different elements of the quality conditions of living. This is especially the case with regard to the protection of the environment on the one hand and the economic development on the other. The notion of environment upon which this paper is based is in itself relatively free of conflicts. Instead of these four concentric circles of rings, one might prefer to choose the picture of the four segments of a circle which also expresses the unity and the reciprocal penetration. The picture featuring concentric circles, however, shows that the different fields are based upon one another.

II. The Protection of the Individual's Environment at the Constitutional Level

1. Fundamental Rights

a. The constitutions of the states throughout the world rarely mention fundamental rights of the type here described which guarantee the individual a decent environment. Some states do not provide any guarantee of fundamental rights at all. Where they exist, the techniques for safeguarding the environment of the individual by means of fundamental rights are quite diverse. Some constitutions contain specific environmental guarantees. Others combine such guarantees explicitly with other fundamental rights. Within a third group of states certain
fundamental rights may be used in the interest of protecting the environment. A fourth category of constitutions finally connects state policy guidelines or mandates concerning the environment addressed to state organs with the protection of the environment of the individual. The effects of the fundamental rights also differ considerably. In principle, state organs are bound. However, the binding effect of the fundamental rights upon the legislature is not in every case definitely clear. In particular, the existence of a fundamental right does not in every case mean that the individual may claim judicial protection even against legislative acts. Moreover, the right is ordinarily subject to being restricted by statute (Gesetzesvorbehalt), whereby the legislature cannot abolish the fundamental guarantees but does have the power to limit and determine their content and scope.

The binding nature of the fundamental rights for the legislature is clearly established in the Basic Law of the Federal Republic of Germany, the Constitution of Denmark, and in the United States Federal Constitution as well as in the Constitutions of the individual states within the United States. The new Spanish Constitution provides a differentiated system binding state authorities to fundamental rights and leading principles. A similar legal situation exists in Ireland and Portugal. The preamble of the French Constitution incorporates for the Fifth Republic the “libertés publiques”; however, these do not have the impact of strict and directly applicable subjective rights. Instead they are general fundamental principles the protection of which is indirectly materialized by the legislature.

b. Fundamental rights specifically relating to the environment have only been known for a few years. They have been developed either in new constitutions or as amendments to older ones. The new Constitution of Portugal for example contains a provision in Article 10 according to which everyone has the right to a healthy and balanced environment. Paragraph 2 of this Article supplements this right by establishing concrete duties of the state as to the safeguarding and development of the natural environment. Pursuant to Paragraph 3, every citizen has the right to claim, in accordance with the provisions established by law, the termination of the causes which infringe upon his right to a healthy environment, and he can also demand appropriate compensation. Article 45 of the new Spanish Constitution establishes the right of all persons to enjoy an environment suitable for their individual development. Paragraph 2 regulates the obligation of public authorities to supervise the reasonable exploitation of natural resources in order to protect and improve the quality of living conditions and to protect and restore the environment. Paragraph 3, finally, provides that the legislature shall enact rules to enforce the right established in paragraph 1 by appropriate sanctions, including the duty to pay damages. Fundamental rights concerning the environment have been codified within the last few years in the Constitutions of Illinois, Rhode Island and Pennsylvania. Whereas the Illinois constitutional provision is limited to the statement that “each person has the right to a healthful environment”, the Constitution of Rhode Island guarantees the rights “to use and enjoyment of the natural resources of the state with due regard for the preservation of their values”, and the Constitution of Pennsylvania declares that “the people have a right to clean air, pure water and to the preservation of the natural, scenic, historic and aesthetic values of the environment”.
c. In some states fundamental rights not specifically concerning the environment are used, at least to a restricted extent, to protect the individual's environment. This is the case with Art. 1 and Art. 2 (2) of the Basic Law of the Federal Republic of Germany which guarantee the dignity of man and the right to life and to the inviolability of his person. A similar situation exists in Austria where the European Convention on Human Rights is a part of the constitutional law. Art. 2 of the Convention also guarantees the right to life for all persons which thus is a directly applicable basic right in Austria. Art. 25 of the Japanese Constitution provides in Paragraph I that "all people shall have the right to maintain the minimum standards of wholesome and cultured living". In addition, Art. 13 states that "all of the people shall be respected as individuals" and that "their right to life, liberty, and the pursuit of happiness shall ... be the supreme consideration in legislation and in other governmental affairs". All these fundamental rights in the respective states are used also in the interest of the protection of the individual's environment, even though it cannot be definitively ascertained to what extent and in what manner such protection is possible.

d. In several states the amendment of the constitution to add a fundamental right relating to the environment has been discussed in politics and legal literature, but results have not yet been achieved. This applies to Switzerland as well as to the Federal Republic of Germany. One of the arguments against such an amendment has been that such fundamental rights could not be enforced within the established system of legal protection. Switzerland has found a compromise, as will be explained later. The new Swiss draft of a constitution developed by an expert commission also contains no fundamental rights relating to the environment.

The discussion of a "loi constitutionnelle" in France before the elections in 1978 ceased when the draft was not accepted by the end of the period of the legislature. Among a number of other fundamental rights, Article 10 was to provide that everyone should have the right to claim a healthful and balanced environment. At the moment the future of this suggestion cannot be predicted.

e. It is obvious that the content of the fundamental rights described above differs considerably. The special fundamental rights relating to the environment either guarantee a right to a healthful or decent environment in general or secure certain elements of the environment, as in particular the new fundamental right in the Constitution of Pennsylvania. The fundamental rights which do not specifically relate to the environment are ordinarily restricted to the protection of life and health or personal inviolability, as for example in the Federal Republic of Germany, Austria and Japan. The specific fundamental rights relating to the environment usually concern the natural environment. However, in the Constitutions of Portugal and Spain there is a close systematic relationship to rights which are aspects of a social environment. The unfinished project concerning the French Constitution presented a similar situation.

The legal nature of the guarantees also varies. The fundamental rights to life and health in Germany, Austria and probably also in Japan have only a protective function against state interference. Since there have not yet been concrete applications of these provisions to disputes involving environmental law, the impact of this protective function is still uncertain. The specific environmental
rights in the American Constitutions are also supposed to have only a protective nature in the tradition of the general functions of American fundamental rights. Neither the former nor the latter establish an additional performance requirement in the sense of creating for the individual a claim to action by the state. Such a future development cannot, however, be excluded in the Federal Republic of Germany and in Japan. The environmental rights of the Spanish and Portuguese Constitutions, on the other hand, have a different legal nature as far as this may be determined by an analysis of the text. According to Article 3 of the Constitution of Portugal every citizen whose right to a healthful environment has been infringed has a claim established by law to demand the elimination of the causes of that infringement and also a claim to compensation. Thus the provision has a protective function. But as the right is contained in the chapter on the social fundamental rights and as paragraph 2 imposes duties on the state, it can be assumed that social elements directed at a performance obligation are meant as well. Article 45 of the Spanish Constitution is not included in the second chapter entitled “Rights and Liberties” but rather in the third chapter “On the Guiding Principles of Social and Economic Policy”. Public authorities are directly bound by the rights and liberties of the second chapter (Article 53 (1)). As to the principles of the third chapter in which Article 45 is contained, the language in the constitution describing the binding effect is less stringent. It only specifys that they are to be applied, respected and protected by the legislature, the judiciary, and the administration. Consequently there is also a difference between the two chapters with regard to the possibilities for judicial review.

In summarizing, the more precisely the interest protected by law is defined, the more obvious it is that a subjective right exists, as e.g. Article 2 (2) of the Basic Law of the Federal Republic of Germany. The more generalized the content of the right and therefore the greater the necessity for the legislature to interpret the right and put it into concrete terms, the more the right will lose its direct legal effectiveness and binding force.

f. It is worth mentioning that the right to a healthful and decent environment in the constitutional provisions of Spain and Portugal is connected with the duty to protect the environment. This indicates that the environment and its elements are public treasures at everyone’s disposal which are to be safeguarded in the interest of society and also of future generations. The protection of the environment and of its natural elements has, thus, a double purpose, serving the benefit of society as a whole on the one hand and that of the individual on the other. This can lead to conflicts with other individual rights, not only with the right to private property but even with the right to work. There is a tendency to grant prevalence to the interests of the society, but only practice will show what specific consequences this will have for the individual protection of the environment.

g. Fundamental rights can generally be enforced in the courts. However, this is not true in all states. In the Federal Republic of Germany, allegations concerning the violation of the fundamental rights to life and inviolability of the person by action of public authorities can be raised in any court proceedings. In addition, a constitutional complaint can be brought before the Federal Constitutional
Court. Infringements of fundamental rights by legislative acts or regulations of a
general character are also subject to judicial review through special judicial pro-
ceedings before the Constitutional Court, both separate from, and incidental to,
the decision of a particular case (abstrakte/konkrete Normenkontrolle). However,
as a rule, these complaint and control procedures are not applicable to
claims that the legislature has fully failed to act. The Portuguese Constitution
provides an abstract control of norms in Article 281 and an incidental control of
norms in Article 282; in both situations the Constitutional Commission has to
decide the question. It is worthy of note that Article 279 contains provisions
concerning constitutional violations resulting from omissions. If the con-
stitutional provisions cannot be carried out because of the absence of legislation
which is necessary for the implementation of the constitutional norms, the
Council of the Revolution has the power to advise the competent organs of the
legislature to pass the bills within a reasonable time. These procedures thus may
not be initiated by the individual but they can be used to enforce the substantive
fundamental rights. As mentioned above, however, Article 66(3) provides that
every citizen whose rights to a healthful environment are infringed may demand
through the procedures provided by law that the causes of such infringements be
eliminated. The question is whether the usual court proceedings may be invoked
in this case or whether special legal procedures, which have still to be created,
will be necessary.

In Illinois, Article 11(2) of the Constitution governs the individual right to sue.
In the other American states, an essential reason for the transformation of
environmental provisions into law has been the desire to eliminate all doubts
about the enforcement through law suits of the right to a healthy environment.
This aspect had been uncertain because of the earlier doctrine of the right to sue. Whether the right to sue also applies to omissions appears nevertheless doubtful.
If such a possibility prevails, this would mean that the substantive legal pro-
visions would lose their mere protective nature and would assume the positive
function of requiring performance. Austria is similar to Germany in that it
provides individual protection through administrative courts and also through
complaints to the Constitutional Court which has the duty of protection and
enforcing fundamental rights against the legislature. There are, however, some
difficulties in distinguishing between the competence of the Constitutional
Court and of the Administrative Supreme Court. Article 53(3) of the Spanish
Constitution clearly shows that Article 45, which declares the protection of the
individual environment to be a principle of social and economic policy, does not
necessarily imply enforcement by the courts. However, this can be achieved
through ordinary legislation which, by putting the principle into practice, grants
legal rights and provides the individual with legal remedies. The Constitution,
however, does not establish direct access to the Constitutional Court for that
purpose.

2. State policy guidelines*

a. The previous examination has shown that a fundamental right - where it exists
   - does not by itself satisfactorily protect the interests of the individual in his
   environment in those situations where the mere protection from interference is
   insufficient and a positive action of the state is required. This is, however,
exactly the current situation. Destroyed or damaged environmental situations need to be restored. “Environment” needs to be developed. As the natural resources of all kinds must continue to be used and exploited in the future, the various demands on them must be balanced against one another through advance planning. This means that the state organs have to become active if they are to actually achieve the safeguarding of a decent and human environment. Therefore, the states supplement their fundamental environmental rights with norms which contain objectives for the activities of the state organs and instructions which may have the nature of objective legal duties to act. Some constitutions restrict themselves to such provisions. But there are also a number of states which have refused to codify not only fundamental rights but also such state policy guidelines on the constitutional level. In some of these states, e.g. in the Federal Republic of Germany, there are discussions as to whether such provisions should be introduced.

b. Portugal and Spain supplement their fundamental rights with state policy guidelines. The Portuguese Constitution includes the obligation to prevent pollution and erosion, to take measures of town and country planning in order to achieve a biologically balanced distribution of land uses, to create natural reservations, parks, etc. and to control generally the exploitation of the natural resources. The Spanish Constitution’s Article 45(2) is content with a general state policy guideline. It requires a reasonable use of all resources and the protection and restoration of the environment based upon the (inevitable) “collective solidarity”, with the aim of protecting and improving the quality of life.

According to Article 24 septies of the Swiss Constitution, the Federation has the power to pass regulations concerning the protection of humans and their natural environment against harmful or disturbing interferences. In particular, the federal organs are supposed to fight air pollution and noise. The previous provisions of the Federal Constitution of Switzerland dealing with the environment were pure jurisdictional norms dividing the powers of the federation and the cantons. They did not provide a comprehensive mandate and were not used to create comprehensive legislation on the environment. Article 24 septies is a compromise between the views of those who wanted to introduce a genuine fundamental right and those who rejected such a proposition. The content of the norm is very comprehensive but is clearly restricted to the natural environment and its various elements. There is an objective legal duty of the state to take action but without any individual right to enforce it. However, the provision is said to have a nature similar to that of a fundamental right since the individual benefits from the state’s obligation to protect the environment even though, as already mentioned, the individual cannot enforce this obligation by legal action. This provision therefore appears to be something between a state policy guideline and a social fundamental right. It may be added that the draft of a new Swiss Constitution prepared by a commission of experts does not contain either a fundamental right specifically relating to the environment or a provision similar to Article 24 septies. The draft, however, lists environmental protection among the goals of state activity. Of course, this may still change.

c. Greece at present is content with a pure state policy guideline. Article 24 obliges the state to protect the natural and cultural environment. In particular, the state is required to take preventive or restrictive measures to maintain the
environment. The protection of the forests is especially stressed. The Italian Constitution contains state policy guidelines only as to the protection of the landscape in Article 9(2). More extensive provisions, however, are to be found in the Statutes of the Regions. Thus, for example, Article 3 of the Statute of Lombardy provides that the protection of the environment is a duty of the Region if it is within its constitutional competence. According to Article 3 of the Statute of Emilia Romagna, the Region participates in the civil, economic and social development of the regional community by taking action in favour of the active protection of the soil and the environment, the latter term being defined as the totality of the cultural and natural values. Similarly, Article 4 of the Statute of Tuscany provides that, in the exercise of the functions and the competence constitutionally given to the Region and in co-operation with the State and especially with the local authorities, the Region should guarantee that area planning is dedicated to the protection of nature, the health and the living conditions of present and future generations. The Region intervenes to protect the soil and the forests, and regulates the water-supply so as to prevent or eliminate the causes of pollution. The action of the Regions is restricted, however, by their constitutional competence. A comprehensive environmental competence does not seem to belong to the Regions.

Some Constitutions of the states of the Federal Republic of Germany also contain provisions which allocate the task to the states to take care of the protection of nature and of the landscape.

The new Constitution of Sri Lanka provides (Chapter 6 “Directive Principles of State Policy and Fundamental Duties”) inter alia in Section 27 (14) that the State shall protect, preserve and improve the environment for the benefit of the community.

The Constitution of the State of New York (Article 14) contains a very detailed provision prescribing that certain forests have to be forever kept wild, that forest and wildlife conservation as well as the protection of natural resources and scenic beauty are policies of the State.

d. Although the Basic Law of the Federal Republic of Germany contains no specific state policy guidelines to protect the environment, there is a general state policy guideline in the so-called social state clause of Articles 20 and 28. This state policy guideline has very extensive and therewith imprecise content, establishing the necessity for state organs, particularly the legislative but also the executive, to implement it and thereby to specify its content through their actions.

One can also interpret the social state clause to mean that in the Federal Republic of Germany a state and society system of mutually balanced interests has to be established, containing among others, a guarantee of the fundamental needs of existence for all. The state, working on different levels through the actions of its organs, has to guarantee, among other things, these fundamental needs. Because the protection of the environment is a fundamental need, one can say that the social state clause also covers environmental policy. Moreover, there are a number of jurisdictional norms which basically serve to divide powers between the federation and the states, but it is generally agreed that these also have some, although not distinct, relevance regarding the allocation of tasks.
e. As a rule, the judicial control of the realization of state policy guidelines cannot be triggered by individuals. Furthermore, such judicial control is possible only where the legislature is subject to constitutional control either by a Constitutional Council, a Constitutional Commission or a Constitutional Court. In Germany, such a control is exercised by the Federal Constitutional Court, which even reviews omissions of the legislature if explicit state tasks are involved. As mentioned above, inaction by the legislature in Portugal cannot be reviewed by the Constitutional Commission but can be reviewed by the Council of the Revolution. The Spanish Constitution also provides for a Constitutional Court, competent to review the constitutionality of statutes. These proceedings may be separate from the decision of a particular case or incidental to it (Article 161 (1a), 163). Whether omissions of the legislature would also be subject to the jurisdiction of the Court cannot be stated definitely at this stage.

The Constitution of the State of New York expressly provides for a citizen suit (with the consent of the Supreme Court) in cases of violation of the article on conservation.

3. Appraisal of the current situation

The introduction of special constitutional rules relevant to the environment is a new phenomenon because the awareness of the danger has just developed within about the last 10 years. It seems to be almost a matter of course that new constitutions contain such provisions.

Thus a definite trend can be noticed which is valid for European and non-European constitutions alike. Difficulties arise in introducing such provisions into existing constitutions. As far as we were able to note, this has been achieved only in a few cases, e.g., in Switzerland and in some state constitutions in the U.S.A. In the overwhelming majority of states, discussions concerning such provisions have taken place but have not yet resulted in enactments since for different reasons the necessary support has not been forthcoming. In some of these states, however, there are legal-political intentions to add such environment-oriented norms to the constitution. In these cases there seems to be a greater willingness to structure these norms in the form of state policy guidelines rather than as fundamental rights.

The arguments in favour of or against a specific environment-oriented fundamental right vary. They depend on the general difference in the constitutional systems and on the various opinions as to the functions of fundamental rights which result usually from the different historical traditions of the states. Some argue that such fundamental rights would be enforceable by the courts only in so far as protection from interference is desired. There is widespread hesitation to codify positive legal norms which would give the individual a right to force the state to take action, in particular in those European states which maintain the tradition of the rights to liberty and which refuse, for whatever reasons, to introduce social fundamental rights into their constitutions. Thus the question of adding an environment-oriented fundamental right to the constitution in connection with problems and discussion topics which are not peculiar to the environmental field and include e.g. the guarantee of a right to work, a right to education and so on. Those who are against such guarantees maintain that the
claims are difficult to realize because resources are restricted and have to be distributed according to many different goals and purposes. Such a political decision, they believe, should not be prejudiced by legal guarantees. In the environmental law the fundamental rights, which establish for the individual certain claims concerning his individual environment, have only a limited function. They are not an appropriate means to solve the entire environmental problem. The supporters are definitely aware of that as well. Environmental basic rights are also supplemented in the current law by additional fundamental provisions. In the first place, the individual environment is only that part of nature and the other elements of the general environment to which the individual has a direct relation. Thus, in particular the protection of nature but also the development of the social environment are in their general forms conditions which cannot be achieved by means of individual claims. Secondly, the individual environment is ordinarily the environment of many individuals. Therefore, individual claims cannot be claims excluding others from the environment. Rather they can only be aimed at securing the accomplishment of the environmental function for the biological-physical needs of the individual through the necessary environmental quality. Thirdly, only those claims can be enforceable, above all before a court, which are intended to protect against dangerous and damaging interferences in the function of the environment. Claims for the provision or restitution of certain environmental conditions will be directly enforceable only to the extent that they relate to an ecological existence minimum. For other problems this necessary aspect of state activities relevant to the environment has to be left in the realm of general state activities where environmental protection and development are achieved within the limits of their feasibility and only after weighing and balancing them against the realization of other aims and purposes. Forthly, in many states fundamental rights may only be exercised directly against acts of state organs, not against private actions. But in western states as a rule the danger and damages to the environment derive from the latter. A fundamental right can therefore only be effective to the extent that private actions require state participation either legally or factually or to the extend that such actions carry out the common purpose of modern states to safeguard the life, the security and freedom of its citizens. Fifthly, each fundamental right stands as a positive rule of law in a legal relationship to other legal rules, above all to other fundamental rights. As a result its content and effectiveness will be restrictively defined to the extent that these other fundamental rights also have to be enforced. How the relation of an environment-oriented fundamental right to other fundamental rights is shaped, and above all, how decisions are made in conflict situations with regard to the priority between fundamental rights will depend on the normative basis in each case. But in spite of these limits on the legal effectiveness of the environment-oriented fundamental right, it is able to fulfill positive functions in developing the environmental law and therefore it would seem advisable to have an environment-oriented fundamental right included within the realm of the respective legal systems to the extent that they contain fundamental rights at all. For the individual a fundamental right provides a material and a legal protection guarantee allowing him to enforce his individual environment interests although subject to the limits described above. Such a right raises these individual environmental interests to the same position as other individual interests protected by fundamental rights. Without this equivalence the environmental interests would always give way to those other higher-ranking fundamental rights. Due to the
importance of the environmental interests for life and existence itself, this equivalence is needed. The legal protection of the individual environment implies at the same time a protection of the environment in general that goes beyond the individual protection because the guarantee to the individual of a certain quality of the environment will be beneficial to all who share this environment. In this way the judicial protection of the individual serves the common interest as well.

If the individual defends himself successfully against a damaging air emission, the air will have a higher quality generally for all. By guaranteeing environmental quality through fundamental rights, a general decision is proclaimed about the foundations and basic purposes underlying the existence of the state and society and therewith also about the limits as well as objectives of state actions. Certainly the stability of fundamental rights is different in each state, particularly in relation to the legislature. But at least in those states which not only bind the legislature to the fundamental rights but also subject that body to a control based upon such rights a practically effective limitation inviolable in its core or basic substance is thereby placed upon the legislature.

However, the decision whether a constitution will contain state policy guidelines or not also depends on whether substantive principles governing state action are to be defined, or whether the drafters only intend to regulate the organization of state power, the state organs, their competence, their relation to each other and so on. Modern constitutions tend more and more to incorporate substantive provisions as well. These substantive provisions express the foundations for the legitimacy of the state. For the sake of those aims and purposes, the people are prepared to obey the statutes and orders of the state organs. Those who govern are not permitted to fix their aims and purposes according to their own interests. Only those who accept and are willing to carry out the aims and purposes laid down in the constitution are to be able to exercise state power. These provisions also define the basic values of a political society on which the people have agreed in one way or another. As they are intended to regulate state action as a whole, they are specially emphasized as compared with other aims and purposes which are not protected in the same manner and over which they prevail.

If such state policy guidelines are not as generally formulated as the social state clause of the Basic Law of Germany but instead contain and enumerate several state policies, as for example the draft for the new Swiss Constitution, then it is necessary to include the protection of the environment as well; for this matter is of fundamental importance. The state policy guideline has the advantage, in comparison with the fundamental right, that it transforms the protection of the environment in general into a state duty. Also it elevates this purpose to a fundamental purpose ranking equally with the others. Thus, it does not have to take a position subordinate to the others because of its legal rank, but instead must be considered and balanced with them on an equal level. The great problem is that the constitutions are not content with defining a single goal for state action but rather contain a number of aims in order to secure the other conditions of the political society which are also regarded as basic. Naturally, conflicts may arise between these different state aims and purposes, in our case especially between the environment and economic and social development. Essentially, the law cannot solve these conflicts. It cannot for all times set fixed
rules of precedence to govern the decision of such conflicts. Which of these fundamental aims and purposes will prevail in concrete decisions will be decided by the peculiar circumstances existing in the state at the time. In such a situation the political decision has to be based on the majority opinion, taking into account the specific social and economic situation of the state. The disadvantage of state policy guidelines relative to fundamental rights is that enforcement of such guidelines can, as a rule, only be achieved by political means and not by legal protection in the courts. At best, state action can be measured against a state policy guideline indirectly in a constitutional court process.

The function of either type of constitutional provision within the entire system of the environmental law of a state will differ from state to state. But generally speaking it may be noted that a fundamental guarantee at the constitutional level on the one hand provides a secure foundation for the provisions of ordinary legislation (which still have to be described below) and acts as a sort of cornerstone in the structure of the environmental law. On the other hand, its function is to bind state power to act in the interest of the protection of the environment or at least to respect and not to violate it by state action. It is true also that the form and the legal binding force of such provisions cannot be judged in abstracto but depend clearly on the national legal system. An extensive system of subjective rights with corresponding legal protection by the courts, including if possible protection by a constitutional court, supplies such provisions with a far stronger practical importance than would exist in legal systems where such a system is lacking. Certainly the constitutional protection of the environment cannot exist on its own. It requires the ordinary legislation which provides support and form to the constitutional rules.

A system of subjective environment-oriented rights is even more necessary where a state has not adopted any environmental norms at the constitutional level. That is the case with regard to a not unimportant number of states. Thus in the following at least a few principles concerning the securing of individual legal positions by means of ordinary legislation will be briefly mentioned.

III. The Protection of the Individual Environment at the Level of Ordinary Legislation

1. General

The protection of fundamental rights of the individual concerning his environment on the level of ordinary legislation in the different states here examined can be reduced to common principles only on a very abstract level. The cultural, social, economic and legal political structures and the content, conditions and pre-conditions are too different. The ordinary environmental law of the various states is also structured in very different ways. Some states such as Colombia, Denmark, Sweden, Japan, the Australian state of Victoria and the Canadian state of Ontario have passed general environmental laws. But these have very differing content and are by no means all-embracing, as a result there are also special environmental statutes as well. In other important states, e.g. the Federal Republic of Germany, France, Belgium, and Great Britain, there are no such
general environmental statutes. On the contrary, the environmental law is composed of numerous special environmental statutes along with individual provisions in statutes with non-environmental aims. Therefore, it is very difficult to discover the corresponding regulations in the different states. Still one can note that the protection of the environment from the perspective of the individual is ordinarily safeguarded, although the content and legal scope vary greatly. The individual can claim against state authorities and other citizens certain rights to a definitive degree of environmental quality.

The form of individual protection depends on the legal system. Some systems expressly provide substantive legal rights which can be enforced by procedural provisions within an administrative structure or in the courts. Other legal systems only grant procedural rights and give access to administrative procedures or to the courts solely based upon an actual interest. Only if such a procedural right in the one form or the other is granted, one can speak of a real legal environmental right of the individual. This is the criterion used to distinguish between such norms which create individual legal rights and those which may relate to humans and their environment but do not establish an explicit individual right.

Only the Colombian Code of Environmental Law grants (in Article 7) a general substantive right to a healthy environment for everyone. The other legal systems define such substantive legal rights in special statutes relating to the different environmental elements, e.g. the air, the water, the landscape, etc. The environmental statute of Denmark provides a general procedural legal right concerning environmental matters with the result that according to par. 74, everyone who can prove his interest in the decision of a case may appeal to the next-higher environmental administrative authority. As for other countries, there is, even as to the formal legal rights, a very close link with the corresponding specific substantive environmental rules.

2. Protection against harmful immissions

a. Immissions are the effects of dust, gas, smells, rays, vibrations and noise which result from emissions and are transferred by the air or in the air.

It is a general principle that the occurrence of immissions should be prevented, and also that this is a task of the State. The first problem is to determine which immissions are harmful to the individual. As a rule this is not fixed individually but instead is based on more or less scientifically accepted average values, the limiting values or standards which the state determines and attempts to enforce. Usually the control of manufacturing plants, which might cause such immissions on a large scale, is based upon the licensing of the installation in various ways, either in terms of the location of the installation, its construction, its day-to-day operations or other aspects. The procedures differ. The pre-conditions for receiving a license are either specified in general statutes as in Denmark, Sweden, and Victoria, or in special emission or air protection statutes, as in France, Belgium, the Federal Republic of Germany, Austria and Holland.

b. The standards or limiting values as well as the other substantive criteria for the licensing of immissions have in some states (e.g. in Germany and Austria) a
so-called "neighbour protection" aspect. This means they do not only serve to protect the interests of the public but also those of the neighbours of such plants as individuals. In France, Belgium and Spain the protection of the environment against emissions is also related to the neighbours, or to persons in some other manner.

According to the environmental statute of Ontario, endangering the life, health and property of a person may lead to an order to stop or restrict the harmful activity (Sec. 12).

Furthermore, it is unlawful to deposit, add, emit or discharge into the natural environment a contaminant that may endanger the health or the safety of any person (Sec. 14).

Article 10 of the Mexican environmental statute forbids activities which might lead to air pollution endangering or harming the life and the health of man and his resources and goods.

The Japanese Basic Act for Environmental Protection defines, in sec. 2, environmental damage inter alia with regard to damage to personal health and to the environment, a term which covers property, animals and plants that are closely connected with human life. Environment protection standards have to be established, the observance of which is desirable for the maintenance of human health and the environment.

c. The substantive individual legal rights are the basis for procedural legal rights. The violation of the former by the granting of a licence can be challenged through administrative procedures or in court and can lead to the withdrawal of the licence. In the Federal Republic of Germany, for example, a neighbour can first of all oppose the granting of a licence before the next higher administrative authority and then, if that is unsuccessful, challenge the administrative decisions before the administrative courts.

In other states this legal protection is not dependent upon such substantive rights. For example, in Denmark a factual interest will suffice. Although environmental law in Denmark does not explicitly provide for the protection of the individual, any person who is able to prove an important individual interest in the decision of the matter has the right to initiate a review procedure which takes place first of all before the administrative authorities and then can be continued in the courts. Similar procedures exist in other states.

The United States of America clearly guarantees substantive protection through formal access to the courts. This is only partly governed by statutes and mostly has been developed by decisions of the courts. The development of environmental law in the United States has been materially affected by the dispute over the standing to sue. But as a rule it may be assumed that access to the courts is allowed if the individual has an important and real interest. In some Anglo-Saxon countries, legal proceedings are not directed against the administration but rather against the polluter himself by means of the traditional forms of action under the Common Law, such as Tresspass, Nuisance and others. However, the statutory law also creates rights against authorities which can be raised in the courts.
3. Water pollution

a. The securing of the necessary water supply and the protection of water against pollution naturally are closely linked. Thus, it is necessary, on the one hand, to ensure that surface and ground waters are not exploited unreasonably. On the other hand it is also essential to protect the water against harmful substances, radiation and heating. From the point of view of the individual, the supply of water for drinking, etc. has to be secured as well as the use of water for specific purposes, such as water for fish, as a power source for mills, as transport way, etc. With regard to the consumption of water by humans, it should be kept in mind that, at least in industrial societies, water is usually no longer taken directly out of lakes, etc. but rather from water supply plants. Water pollution, thus does not directly effect humans in the way that air pollution does.

b. The use of water, above all its removal or the addition to it of solid, fluid or gaseous substances and the heating of water, is partly governed by special water statutes enacted partly in connection with other statutes. General environmental statutes as in Denmark, Sweden, Ontario, Colombia and Victoria also contain regulations concerning the protection of the water. In addition, special water statutes may exist as well.

Generally speaking, the use of water is dependent upon the acquiring of a licence. The granting or denial of the licence usually depends on the quality of the water with regard to the securing of the water supply, the safeguarding of the general or public health, the thrifty use of water and its potential in general. Some states have put their water under governmental control in a variety of ways. The licence can be combined with injunctions and conditions, e.g. duties to purify and clarify. In some states, as in France, Holland and the Federal Republic of Germany, there are system of contributions and taxes intended to secure the water supply. A comprehensive comparative survey of the question to what extent an individual legal right to the enjoyment of clean water is guaranteed could not be undertaken within the framework of this study. In Germany, for example, certain rights of use are protected, as for instance a fishing right, or a right to maintain a mill as well as rights to remove water or to introduce substances into the water, which rights could be asserted against other persons who claim similar rights. The public usage open to everyone, e.g. scooping drinking water from a stream, swimming in a river, and sailing on a lake, does not create particular individual rights in the Federal Republic of Germany.

c. The lack of this substantive securing of individual rights does not, however, imply that the individual has no power at all to plead his interest in the water. To the contrary, administrative or legal proceedings also exist within the framework of the different legal systems as in the case of the protection against emissions. This legal protection, however, differs in its extent depending upon whether only explicit subjective rights of legally protected interests can be pleaded as is the case in West Germany, where these rights and interests are not directly created by statutes but by administrative concessions, or whether it is sufficient to refer to factual interests. Some states like Holland provide special procedures in the area of water law. For the rest, the procedures described above in the field of protection against emissions are also applied in water law under corresponding conditions.
4. Individual rights to access to the landscape and to recreation

a. The protection of the individual's interest in recreation and therefore in nature in general is essential nowadays. As a rule nature conservation is a general objective task only for the benefit of the public. But in some states individual rights are also granted to a limited extent, which is affirmed by the fact that such rights sometimes are guaranteed at the constitutional level.

b. In some states, statutes give the individual the right to enter forests, to walk on the lakeside and to wander through uncultivated land. This includes not only public forests and lakes but also those which are in private ownership. These rights, also covering skiing, riding, etc., are under certain conditions restricted to fixed routes. Such rights are to be found e.g. in the Federal Republic of Germany and in Denmark. The Swiss Civil Code provides that everyone has the right to walk in the forests and fields, public or private, in order to collect mushrooms, berries and other wild fruits as has been customarily done.

The rights to access, however, usually do not guarantee that forests, lakes, rivers and landscape will be preserved as they now exist or that such areas which are necessary for recreation have to be established.

These recreation uses are difficult to harmonize with other uses of the fields, forests, lakes and beaches since the different uses may come in conflict with each other. The enjoyment of the environment should not lead to its own injury, but such injury cannot be precluded, in particular in the case of the use of forests and lakes by large segments of the population.

5. Participation in administrative proceedings

a. Another possibility for safeguarding individual interests in the environment and its specific aspects is to permit the individuals who will be affected to participate in the administrative proceedings in which decisions will be made on measures or activities that would or could result in the modification, destruction, etc. of the environment. In this way the process of decision-making can take individual interests into account before the final decision is reached. The possibility of such participation of interested persons in administrative proceedings depends on the general structure of the administrative decision-making process in the particular state. The rights to participate differ and may include the right to submit applications, the right to raise objections, or the right to plead one's own point of view in a hearing. The affected citizens, however, do not participate in the decision itself although they may take part in fixing the above mentioned limiting values or standards upon which subsequent decisions will be based. This type of participation exists in West Germany with regard to the standards regulating the emissions of dust, gas and noise.

b. Rights to participate in proceedings relating to the issuance of licences to install and operate plants which may result in air pollution exist in the Federal Republic of Germany, France and in Belgium. In those states one can object to a project and take part in public hearings where one's objections can be explained in detail. The groups of persons given such rights vary considerably. The circle of persons is very large in West Germany while in France and Belgium it is usually restricted to the neighbours.
Such rights also exist in the law governing planning. Some states provide special fact-finding proceedings if an airport, a road, a refuse plant, etc. is to be built. Here also the affected persons may raise objections in oral hearings.

In the field of city planning, there is an increasing tendency to develop plans for the construction and development of settlements. Also in this situation participation rights may be established. In the Federal Republic of Germany, for example, those who are affected by these plans can present their objections and opinions during the course of the planning proceedings.

In the U.S.A. the environmental impact statement is intended among other purposes, to secure public participation in proceedings concerning the environment. These statements must be publicly displayed and publicly discussed, during which time objections and opposing views can be presented.

IV. Summary

This paper could not give a detailed description of the legal protection of the interests and needs of the individual concerning a decent and human environment. This was also not its purpose. The idea was to show the basic principles on which this protection depends and to explain important legal instruments by which it is realized. On the whole the protection of the individual's environmental interests is an integral part of the respective national legal system. Recapitulating, the following theses could be suggested:

I 1. In substance the protection of the natural environment is essentially viewed in all states in terms of the public interest but also in terms of certain individual interests, above all life and health.

2. The legal solutions in the municipal systems differ considerably. In some systems direct individual legal protection is granted; in others, this is achieved indirectly by general protection in the interest of the society.

3. Individual protection can be provided by substantive as well as by procedural norms.

II 1. In some countries legal protection is guaranteed in the constitution, either by fundamental rights or similar provisions, or by provisions identifying state activities or establishing state policy guidelines. There is an increasing tendency to create such fundamental guarantees at the constitutional level.

2. The legal content of the fundamental rights varies. In some instances they are restricted, according to the traditional rights of liberty, to providing the individual with the right to ward off interference by authorities in his rights. The recent Western European constitutions include, in addition, the affirmative duty of the state to act in favour of the individual. However, there is no subjective right of the individual to claim such an action.
3. To the extent that fundamental rights to positive action by the state exist, they are supplemented by more or less detailed allocations of tasks to the state authorities to protect the environment. There are also independent state policy guidelines or norms regulating the activities of the state which directly concern the protection and the development of the natural environment in general, but indirectly also may supply the individual with a type of fundamental guarantee to his environment.

4. The enforcement or realization of the constitutional provisions varies from state to state. The usual legal protection through the courts includes in some legal systems review by a constitutional court where protective rights are concerned. Social norms granting service and positive action by the state usually must be transformed into concrete obligations by legislative action. As a rule they are not enforceable by the individual.

III 1. All states protect the environment by means of ordinary legislation below the constitutional level. These concrete and detailed provisions supply the individual with specific rights concerning the different aspects of the environment.

2. These substantive rights protect certain needs and interests especially against emissions and - to a lesser extent - also against water pollution.

3. Special judicial and administrative procedures exist to protect and enforce these rights.

4. These procedures allow the individual to challenge the infringement of his rights and to contest the administrative decisions. But even where a substantive right is not explicitly provided by law, the protection of factual interests of the individual, especially those of neighbours, is secured by administrative and judicial proceedings.

5. In some states, directly affected persons enjoy the right to participate in the decision-making process concerning environmental aspects, in particular with regard to the construction and the approval of plants, which may injure the environment. Generally such persons have the right to be informed about the project and can raise objections. The authorities must then decide these issues and give the reasons for their decision even if they do not uphold the objections.
Footnotes


8 See also Kiss, below p. 82 et seq.

9 See also Gündling, below p. 145.

10 See Lummert, below p. 238.


14 See also Garner, below p. 156 et seq.

15 See Wandesforde-Smith, below p. 105.
Individual Freedom and Environmental Protection
by Rudolf Dolzer

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I. Statement of the Problem
In 1914, a Norwegian court dismissed a claim for compensation filed by the former owner of a waterfall who had lost his title under a law which in effect left him with all previous powers except the right to sell. Written in virtually prophetic terms, the concurring opinion went far beyond the facts of the case: "... in the course of future development, social problems and conflicts will increasingly emerge, and regulations of property will be enacted and become
strictly and stricter, and similarly legal opinions in this area will become more subtle and subject to change. The correctness of such decisions which today may, in their necessity or justification, be considered as doubtful, will in the near or distant future appear to be self-evident. Changes will occur faster or slower, in accordance with other developments. It lies also in the nature of this course that the bonds on property rights will become tighter. By and large, the years since then have proved these predictions true. The broad scope of individual freedom which characterized the relationship between State and individual in the nineteenth century has been limited by various legally recognized social concerns. Today, environmental policies may be viewed as a strong force which could, in effect, lead to an additional reduction in individual liberty. Some judgments and laws of the last ten years clearly support this view. Indeed, the wide range of individual liberties guaranteed in the past provided the legal basis for the cumulative actions which have brought about the present environmental situation. Only a few environmentally disadvantageous actions have violated existing laws in the past. For the most part, property rights have, of course, legitimized such actions.

Environmental demands upon the rights of owners potentially stand, together with such diverse areas as the landlord-tenant rules, torts law, or even taxation, in the context of public law, where the desire for individual freedom and the requirements of socially acceptable behaviour permanently call for legislative or judicial adjustment of competing interests. Environmental considerations in property law clearly illustrate that the standards for this continuing process of adjustment evolve not only from changing factual situations, such as the reduced availability of natural resources, but also from changing value judgments, such as those relating the dimensions of economic growth to the desirability of a relatively clean environment.

It is generally accepted that the precise legal contours of private property, although unchangeable in their essence, have been shaped at their periphery by changing notions of social justice which evolve as problems old and new are reconsidered by each succeeding generation. New forms of property have appeared in past decades as some aspects of traditional property rights have been curtailed.

In the light of increasing public sensibility to environmental questions one might at a first glance assume that the laws provide for more and more disincentives to constitutional rights of freedom from constraint being used in an environmentally disruptive or even environmentally ambivalent fashion. But apart from a few clear-cut issues, a comparison of national legal orders by no means reveals a unified picture on this point. One of the striking features of a considerable number of Western legal orders is the high degree of uncertainty about the constitutional relationship between individual liberty and environmental strategy. Not even the general direction in which the law moves can be clearly identified today. The explanation for this initially surprising state of affairs lies in the complex interrelationships between the legal values which inform governmental decisions on environmental improvements and individual liberty. The increasingly utilitarian-oriented role which the modern welfare State has assumed in the life of its citizens has brought about those stricter regulations predicted in the judgment mentioned above, but has also again raised, with
renewed force/the broad question of the role and status of constitutional rights
for the individual. In fact, one of the most comprehensive and fascinating studies
on the subject, which appeared in the United States in 19777, raises a series of
philosophical questions which, in essence, cast doubts on the wisdom of the
property-restricting tendencies which have prevailed in the past9.

The following observations deal mainly with the interaction of property law and
environmental concepts; they are not intended to prescribe a model scheme
applicable to all legal orders. The complexity of the constitutional dimensions of
property law itself prohibits any such ambition9. Perhaps more than in any
other area, the rules on property may justifiably be called a microcosm of each
legal order10. The availability of resources, the human ideal envisaged in the
legal order, the specific requirements of each phase of social and political devel-
lopment and the existence of traditional elements, and the division of powers
between the legislature and the judiciary, for instance, all play their part in
shaping the rules governing private property11. None of these factors will be
exactly paralleled in any two legal orders. Nevertheless, a comparative survey of
issues and trends may help to determine the adequacy of the present state of the
applicable rules, to indicate potentially weak points and to find legal methods of
overcoming them.

We shall here look mainly at those countries in which legislative measures can be
reviewed by the judiciary for their consistency with constitutional provisions12.
This does not assume that, from an institutional viewpoint, judicial review
necessarily secures optimal solutions; it is helpful, though, to look at judicial
reasoning in this context because, at least in concrete cases, the conflicting
interests and the guiding principles tend to be spelled out explicitly. Where the
legislature is not bound by a judicially interpreted constitution, the same ele-
ments and factors may ultimately have to be weighed up, in spite of the
different techniques of interest-balancing required by the respective natures of
the legislative and the judicial decision-making process.

Another limitation on the scope of the following remarks stems from the focus
on property issues. It must be borne in mind that the relationship between
individual freedom and environmental concerns may also raise new questions in
other areas of individual rights. For instance, the freedom to choose one's
profession can easily be affected in the case of a fisherman who is confronted
with the prohibition on fishing in certain areas12 or that of the farmer who has
specialized in a crop which needs to be treated with environmentally suspect
chemical substances. Moreover, general issues concerning the role of the State
and the duties of the individual arise if, for example, the legislature increasingly
imposes positive obligations on the individual instead of simply forbidding
certain forms of conduct15. It may well be asked whether the State itself should
not assume all such obligations which are of a positive nature. In spite of the
relevance of such questions for our study, it is the harmonization of public
environmental demands with the rules on property which will be considered in
detail in the following pages. The potential conflict of interests is highlighted in
this area in a typical manner; in addition, the legal discussions have so far been
much more intense in the property area than in the case of other individual
rights.
II. Property, Legislation, and Constitutional Values

Legislative definitions of property are essential to the very existence of property rights. Potentially conflicting uses of property necessarily call for authoritative allocations of the existing resources. This holds true irrespective of the existence of a judicial body assigned to control the compatibility of legislative decisions with a constitutional text of superior rank. In a system of parliamentary sovereignty like that in the United Kingdom, the legislature will restrict property rights and grant or deny compensation in accordance with the views of the governing political forces. This situation is, in its practical effects, not unlike another which may be less familiar. It is easy to imagine a system in which a judicial review of legislative decisions exists in general, but is of no importance for property rights due to the absence of a constitutional provision protecting such rights.

With regard to the protection of property from legislative interference, the legal situation in France resembles this latter scheme. The 1789 Declaration of Human and Civil Rights states in Art. 17 that property "must not be violated and is sacred" ("inviolable et sacré"). This Declaration is incorporated into the preamble of the present Constitution and thus has been considered to be legally binding. Nonetheless, it appears that Art. 17 has much less significance today than corresponding formulas in other constitutions. Traditional interpretation has limited its scope of application to cases of classic expropriation, i.e. cases where the owner lost his title by an act of the government. In contrast, this interpretation of the property clause has ruled out its legal relevance for those cases in which the legislature restricted the legal use of property by means of general regulation. Thus, the range of options available to the legislature has been considerably wider than in countries where the regulation of property has been fully subject to review under the property clause. This development may be explained by the fact that the French legislature has been considered since the Revolution as the guardian rather than the potential offender of civil rights; it must also be recalled that, precisely in the area of property rights, only the welfare State which emerged this century has significantly interfered with private rights. Up until 1971, the interpretation of the property clause in France was of little significance since no system of judicial review of legislative action was recognized. It does not appear that any new interpretation of the property clause has been suggested since the landmark decision of the Conseil Constitutionnel in 1971 which introduced a rudimentary system of judicial review, but it is possible that the constitutional discussion may not entirely have ceased as far as the future is concerned. The standards against which the laws are measured also include the general principles as recognized by the Republic. In a more extreme case in which a legislative decision defining property were to deviate dramatically from traditional notions of property, the Conseil Constitutionnel might possibly see in these principles a potential restriction on legislative curtailment of property rights.

So far, the legislature has not been limited in its freedom by judicial interpretations of property. In the system which has emerged, Parliament has granted or denied compensation in cases of property regulations on an ad hoc basis. An established standard has not appeared. For this reason, the social justice of the general scheme has been questioned. Indeed, a survey of the French laws
granting and denying compensation for restrictions on the use of property seems to indicate a certain degree of legislative arbitrariness which will hardly be condoned by those owners who were denied compensation 18. From an environmental viewpoint, the appeal of the traditional French scheme is obvious. Environmental regulations would hardly ever require compensation. From a legal viewpoint too, the dependence of notions of property upon legislative decisions may also militate in favour of the French system. In fact, one of the most famous American articles on the subject also builds implicitly upon this observation and consequently concludes that, under the American system, compensation is only due, apart from cases of formal takings, where the measure does not balance competing private interests but is rather intended to promote governmental enterprises 18a. However, the author has considerably modified his view in a later article. In the light of the wide range of ways in which property affects activities under the welfare State, objections to this view from a social justice standpoint are indeed not surprising. But the rejection of this scheme raises a constitutional problem which seems, at first sight, virtually impossible to resolve. If legislative decisions are essential to notions of property and the constitutional text does not itself spell out a standard by which “property” can be judicially determined, how then shall a constitutional court identify measures which are inconsistent with the idea of the protection of “property”? A simple recourse to the existing scheme obviously offers no viable solution. Thus, a certain pre-constitutional view, vague as it may be in its contours, seems indispensable to any standard by which “property” is described 19. The courts have seldom articulated this dilemma in so many words, but their efforts can hardly be understood without recognizing this question of construction. We shall now turn to those concepts and methods which the courts and the commentators have developed to identify “constitutional property”.

III. Environmental Interests as Non-Comparable Constitutional Values?

In theory, two basic options are open in order to deal with the harmonization of environmental demands and property interests. The first method is to view the environmental issue as one sub-category of the large number of social interests which may limit ownership rights; such an approach calls, in principle, for an application of the traditional standards delimiting individual and social interests in the area of property law 20. The second method is to consider environmental issues strictly as a category of its own. This latter perspective would allow for rules to be established concerning the legal treatment of environmental questions irrespective of categories which have been previously shaped to cover the relationships between social and traditional interests; we shall call it the “non-comparable standard”.

1. Towards a narrow legal notion of the “object” of property rights?

It appears that such a radical and novel approach (as the second method mentioned above) has not so far been accepted anywhere. The concept which in some respects comes close to this line of reasoning is that of M. Lendi, a Swiss scholar 21. In an extra-legal sphere, Lendi’s argument divides the notion of property into three component elements: one individual-psychological, one social
and one economic. In his view, the legal development over the past hundred years was shaped without regard being had for the limitations posed by these pre-legal concepts, inasmuch as "property" became synonymous with a "full and exclusive power" to use or abuse the object. Lendi's suggestion to correct this is to focus on the legal level, less by concentrating on the various definitions of the power of disposition, but instead by reconsidering the notion of the thing as object ("Sache"). In this perspective he proposes to identify the objective being ("Wesen") of each thing, and to determine the rights transferred by ownership in the light of this objective nature. In other words, he submits that a use of the property which collides with characteristics inherent in the object cannot be considered as being a part of the power to dispose of an object. For environmental purposes, this might mean that the environmental context of the object itself stands as an inherent barrier to rights of ownership.

Although original in argumentation, Lendi's views are in their conclusions reminiscent of a German school of thought on property law developed decades ago. According to this view, the concept of "alienation of purpose" ("Zweckentfremdung") has to play a key role in determining the taking issue. Whenever property is "used in accordance with its function" ("funktionsgerechte Verwendung"), governmental interference with this use requires the payment of compensation; conversely, the prohibition of a "dysfunctional use" does not constitute a taking. This doctrine has never been widely accepted in Germany. In fact, its modern proponents have substantially modified it in order to take greater account of notions of the owner's legitimate expectations.

The limited role of the "alienation doctrine" in Germany may well be explained in terms of counter-arguments which are also applicable to Lendi's reasoning. Lendi argues from a philosophical standpoint which assumes that it is possible to determine the objective nature and purpose of a thing which is independent of the human mind. Secondly, his argument is compelling only if the legal concept of property is indeed closely linked to those psychological, social and economic dimensions of thinking which he presumes. At both levels, Lendi is not a priori wrong although much can be said against his two basic assumptions. His innovative concept has merit because it draws attention, at the legal level, to the complex interrelationships between both man and nature and the various parts of nature themselves. Thus far, the thrust of his reasoning has not found its way into general legal thinking, perhaps because of the questions raised above. Nevertheless, some recent judicial decisions indicate that the systematic function of the object of ownership in its interrelated ecological framework may well play an important role, albeit a limited one, in refashioning traditional modes of thinking about property rights.

2. Compensation only in case of physical invasion?

Within the variety of traditional formulas used to characterize takings, there is one which theoretically is not related, but which, from an environmental viewpoint, in effect comes close to the "non-comparable" standards. The "physical invasion" test states that only a direct, physical governmental intrusion upon private property calls for compensation. Historically, this approach was of considerable significance in the 19th Century, and a few recent judgments appear to refer to it as well. Few, if any environmental measures would require com-
pensation by this standard. But in the light both of the scope of activities of the welfare State and the market mechanisms which at present determine the role and value of private resources, there is little chance that this old test can be revived. Thus, attention must primarily be focussed on the compatibility of presently accepted standards with environmental concerns.

IV. Environmental Interests in Current Property Schemes

1. The police power of the State and its implications for ownership rights

Despite famous definitions to the contrary, ownership rights have never had an absolute character; the chaos which would otherwise have resulted can easily be imagined. Individual rights of third persons, particularly of neighbours, necessarily place a limitation upon ownership rights. And as far as the rights of neighbours are concerned, the State has set up the rules and has them enforced by the neighbours involved themselves, through the judicial channels. Although this study is only concerned with the limitations on ownership rights resulting from public interests, it must be borne in mind that the governmental allocation of resources via property law is implemented in the area of neighbour ("nuisance") law as well. In fact, many facets of present environmental law dealing with property rights fall into this narrower category of law regulating competing private interests.

Where the exercise of ownership rights has a broader effect and potentially threatens the general public, the State itself has had to assume the task both of setting the proper limits and of enforcing them; according to traditional principles, no compensation is due when the State uses this so-called police power. Given the variety of actions and situations which may be relevant in this context, the precise scope of the police power has not been spelled out exhaustively for individual situations, but is more abstractly described by means of a general clause. Thus, the Supreme Court of the United States found that the police power protects the "public health, safety, morals, or general welfare." French laws similarly describe the substance of this competence with the phrase "bon ordre, la tranquillité, la sécurité et la salubrité publique" and the courts in the Federal Republic of Germany have interpreted the corresponding term "öffentliche Sicherheit und Ordnung" such that it covers not only the protection of security and property but also "all moral norms considered by the majority to be indispensable conditions for an orderly social life." Other States have adopted similar approaches.

General as all these formulas may be, one cannot ignore the fact that in the modern context they may have a direct bearing upon the State-controlled environmental limitations on private property. If one takes the simple case of a machine producing exhaust fumes that make it hard to breathe in the nearby surroundings, such a clear endangering of public health will undoubtedly justify the invoking of the police power. The scope of that power, however, cannot easily be determined in cases where the public interest is affected in a less direct manner. The term "public welfare", for instance, might according to general principles be interpreted in such a broad manner that it would raise almost no barriers to the State's ability to legitimize the most diverse actions on grounds of
the police power. Indeed, a judgment rendered in 1954 by the U.S. Supreme Court lends itself to such an interpretation. In the modern environmental context, such lines of reasoning might relieve the State of virtually all financial burdens arising out of questions of compensation for owners affected. In 1972, a court in Wisconsin had to decide the question whether a county shoreland zoning ordinance which prevented landowners from filling in that portion of their property bordering on a lake amounted to a taking of the property or whether it should be considered as a non-compensable regulation of property. The court's decision was based on a distinction drawn against the background of the police power; in the view of the court, because the ordinance was not aimed at producing a public benefit, but was intended to prevent a public harm, the court rejected the owner's claim for compensation. The thrust of an earlier decision of the U.S. Supreme Court, in a non-environmental issue, interpreted the police power in a similarly broad fashion: it upheld a Kansas statute prohibiting the manufacture and sale of alcoholic beverages but granted no compensation to the owners involved.

Nevertheless, the decision of the Wisconsin court cannot be considered to represent the modern state of the law on this point. The term "welfare" as a component part of the police power will have to be interpreted in a more narrow sense if the right of ownership is to retain its rank as a constitutional guarantee in the future. On the same footing, the simple statement that a legislative measure is intended to prevent a public harm has generally not sufficed as a definitive answer to the taking problem. As a rule, the compensation question has not even been settled by a more abstract finding that the prohibited use constitutes a harm, or is noxious from the viewpoint of the public. Nor has it been widely accepted that a legislative regulation dealing with conflicting but socially non-offensive uses of property will never require compensation to be paid. Where the threat to public welfare from private property is not clearly apparent, the courts will be reluctant to accept the police power as the sole basis for the State's competence to interfere with an owner's rights without providing compensation. If the threat to the environment resulting from the exercise of property rights were in the future to reach a level at which, objectively, only direct and immediate State intervention would secure effective remedies for the objects protected by the police power, this limitation of individual rights could then serve as the legal basis for non-compensable actions.

2. "Gravity of economic impact" as the standard test: scope, significance and modern variations

At present, the economic impact of a governmental measure upon the property affected generally plays a central role in drawing the distinction between uncompensable regulations and compensable takings. Looking at recent decisions, it would not be justified to state that environmental measures are exempt from this criterion. Of course, it is not every impairment of an object's economic value which will make a governmental measure compensable. The precise degree of impairment which in theory separates takings from regulations in this respect can hardly be identified in a few words. Courts confronted by these issues have used formulas which are flexible enough to escape any attempt at definition. In a judgment of 1922, the U.S. Supreme Court used the following memorable phrase:
"The general rule at least is, that while property may by regulated to a certain extent, if regulation goes too far, it will be recognized as a taking."

The consequences of this or similar approaches are not necessarily encouraging for potential environmental programmes, given the fact that government funds available for providing compensation to owners are limited. Almost by definition, environmental efforts relate to resources which have been or will become scarce; and scarce materials tend to be expensive. Land, of course, is the classic example which comes to mind here. In a densely populated area, it is not difficult to imagine the change in value of a large piece of property upon which a park is to be developed and where building permits will thus be denied under the terms of a legislative programme. Thus, the financial burden of this standard test may be a heavy one for a number of environmental programmes. One may speculate at length about the adequacy of this result. But one must bear in mind here that a drastic and uncompensated reduction in such economic values as land or existing industrial plants would have economic, social and political repercussions transcending direct environmental problems. This may be the chief reason for the relative stability of the law on this point and its corresponding resistance to drastic environmentally motivated innovations. Inasmuch as approaches to the question have slightly altered, the alterations have been less evident for the general broad economic impact tests than for those sub-formulas and standards which have been developed to give clearer practical meaning to these vague tests. Some of these sub-formulas in theory have no potential to modify the general "economic impact test"; others may be interpreted more flexibly in a manner which might in some respects require a more thorough and intricate analysis than the one suggested by the traditional impact tests. It seems quite likely that future changes, where they are adopted, will be implemented by means of a stronger use of these sub-formulas which will now be discussed in greater detail.

a) Equal protection and the taking issue

The requirement of equal treatment does have a bearing upon the parameters of the taking issue. The larger the group of owners affected by a certain governmental measure, the more obvious the public benefit will appear to be. Conversely, the smaller the group of owners, the more likely these owners are to feel that they have been singled out to make a special sacrifice for the community as a whole. From the viewpoint of social justice, it is not difficult to understand that the burden imposed upon a small group of owners will more urgently call for compensation than the same burden falling upon a large segment of the population. The German Bundesgerichtshof has for a long time built its reasoning upon this idea of the "special sacrifice" (Sonderopfer). The logic of this approach is most compelling in cases where an identical or similar property-restricting measure affects, on the one hand, a large group and, on the other, only some members within that same group. Apart from such cases, however, the doctrine of special sacrifice is subject to doubts as a general concept which might help to identify measures requiring compensation. The necessary criteria by which one determines these individuals who are to be treated equally are extremely difficult to establish. Formal equality and material equality must be kept apart in this context. A measure which affects all owners of pinetree woods
may be judged by reference to the situation of all farmers, all owners of land, all owners of land covered with trees, all owners of woods, or all owners of pinetree woods. In addition, the equal protection rationale offers little guidance in the typical case where it can hardly be argued that someone has been singled out from a distinct group. In many cases, the group (e.g. owners of wetlands, owners of cars) may be sufficiently easy to identify and all members without exception may be affected. In such circumstances, the notion of equal protection does not seem to provide an approach which allows the question of compensation to be dealt with comprehensively. For these reasons, courts have referred to standards of equal protection in determining the question of compensation, but have not found it appropriate to accord central and exclusive importance to them in deciding the taking issue.50.

b) Balancing private and public interests

Another method of refining (or even replacing) traditional taking formulas has consisted in balancing the societal and individual concerns involved.51 It is a matter of terminology whether this test is named a "balance test" or a "proportionality test". Both approaches require a weighing-up of private and public interests. As a general principle of law, the "proportionality test" has received constitutional status, for instance, in the Federal Republic of Germany. Nevertheless, the explicit weighing of interests involved as a solution to the taking issue has so far met with more interest in the United States than in European countries.

Of course, the economic impact test itself is not necessarily inconsistent with a weighing-up of interests. In general, a severe effect on the value of the property will, under a balancing test, also call for a result favouring the owner. Where the effect upon property is far from severe, the economic impact test itself precludes the possibility of compensation. In addition, the balancing test tends to ensure that no steps restricting the use of property are taken for the public benefit which cannot clearly be established. It is possible that diverging results might be obtained where the impact upon the owner is severe but the legislature and the court agree that priority should be accorded to the public interest in the issue.52. But, of course, this aspect of the balancing test points to a question as to the constitutional validity of the test itself. Inherent in the notion of individual rights is the assumption that the State may not enter certain private areas, whatever the motive in the individual case may be. In the balancing test, this fundamental aspect of individual rights must be paid particular attention because the test leaves entirely open the criteria by which the public and individual values are to be measured against one another. This weakness in itself would support an argument that the balancing test can only serve as a supplementary concept, but not as an independent scheme. Certainly, this evaluation would have to be modified if some identifiable interests (societal or individual) could objectively be classified as superior values which would have to give way only in exceptional cases. As far as environmental considerations are concerned, attempts have indeed been made to confer such a status upon them in the framework of the balancing test.53. In the light of the far-reaching consequences of such an approach, however, these proposals have not met with considerable support.
c) The prior and future uses and the taking issue

Within the economic impact test, one central element relates to the prior and potential future use of the property in question. Where the prior use can be considerably restricted without payment of compensation, a broad scope for regulation is thereby made available to the legislature. A constitutional doctrine of this kind, however, does not seem to be generally recognized anywhere55. One might at first glance question the definitional value of the prior use in formulating a taking scheme; the existence or non-existence of a prior use is fortuitous inasmuch as it bears no intrinsic relationship to the property itself or the general societal interest to be protected. Nevertheless, a strong reason in favour of the protection of the prior use (apart from exercises of the police power) has been seen in the notion of legitimate reliance, axiomatic to the very concept of property rights. Thus, the major practical considerations do not concern the prior use, but the potential future use which might be restricted by property-regulating measures. If all potential uses were to be protected by the guarantee of property, no room for State regulation would be left56. Thus, the scope of protection must necessarily be less status quo-oriented. The exact line to be drawn in this context may well again be related to the economic impact test itself, by simply measuring the economic impact. A more differentiating approach will look to the range of future uses which will remain open and those uses which will be closed by the regulation. Thus, distinctions may be drawn with the help of information as to the traditional use of the kind of property in question, the traditional use of the specific piece of property, and the range of options still open for the owner. Further, a general clause may be used which indicates the remaining "reasonable use"57 to which the property can still be put after the enactment of the regulation. Under such a general clause, the freedom to take more recently-developed social policies, such as environmental strategies, into account becomes potentially greater than in the case of traditional rigid formulas. All these considerations may also be applied to the question whether the freezing of the present status quo by prohibiting any expansion of the present use may still be considered to be a non-compensable taking.

The precise role of the prior and future uses of the property in relation to the economic impact test may have to be spelled out in greater detail in the various national legal orders in the future. It is conceivable that consideration of the prior and future use will lose some importance as against the economic impact test, but the general tendency seems to be to the contrary, that is, that a careful analysis of the remaining potential uses will play an increasing role within the recognized framework of the economic impact test in the future.

The remaining use and the "situational commitment" of the property

For the purposes of determining those uses which may be prohibited in the future, the doctrine of the "situational commitment" ("Situationsgebundenheit") of property has been developed by the Bundesgerichtshof in the Federal Republic of Germany. It was first formulated and applied twenty years ago in a case involving environmental interests58. The plaintiff in that case owned a large farming area on which a well-known group of eight beech trees and two oaks (popularly called the "dome of beeches") had long been growing. The court had
to decide whether a taking had to be assumed from the fact that an agency had designated it a conservation area and this had prohibited the felling of the trees. Rejecting the plaintiff’s claim, the court applied the doctrine of situational commitment. According to the judgment, the natural location of a piece of land in the general landscape may impose a special responsibility upon the owner not to use his property in a certain manner. If “a reasonable and economically-minded person” would not make such use of it, then the legislature has the power by this reasoning to transform the moral obligation into a legal one. Exceptions are only recognized if the measure blocks the major economic use of the property for the future or if the prior use is thus prevented. Of course, these exceptions significantly limit the scope of the doctrine, particularly if the phrase “the major economic use” is broadly interpreted. Nonetheless, the potential of this formula for limiting the number of cases in which no compensation need be paid for environmental measures affecting property is clear.

The German doctrine of “Situationsgebundenheit” has a striking parallel in the reasoning of the Italian Constitutional Court. To determine what amounts to constitutionally protected property, this Court has referred to the “purpose inherent in the nature of the object” ("destinazione inerente alla natura del bene")60. Whenever the legislature regulates the use of property by identifying this nature without establishing limitations extraneous to that nature ("... il bene assuma l’indice che ne rivela all’esterno le qualità...")61, no taking may be assumed.

Perhaps more than any other doctrine, the conceptual starting points of the Italian Constitutional Court and the Bundesgerichtshof are worthy of further development62. On the one hand, the literal scope of the formula is not so broad as to lend itself to unlimited interpretative expansion. On the other, in an environmental perspective the explanatory value to be derived from the doctrine’s intrinsic logic sets it apart from more neutrally phrased concepts which do not even offer an initial guide for judicial (or legislative) debate. Needless to say, the breadth of the formula itself calls for a more concise conceptual framework and for greater precision which would allow it to be applied more easily in concrete cases. However, no few words, however phrased, will satisfy all these requirements. What is needed today from an environmental point of view is a starting point for debate which does not collide with the basic notion of individual rights, but still reflects the increasing concern felt about the course of past and future environmental strategies.

V. Conclusion

The traditional legal techniques developed in national legal orders to regulate the use of property are often flexible enough to accommodate environmental concerns. They do allow for legal responses which are attuned to the degree of forcefulness with which environmental dangers appear. The importance attached to environmental concerns in general may have to be reconsidered in the future. The initial (and sometimes conflicting) attempts by courts may increase in authority with the guidance of legislative decisions. Even so, easy solutions will not readily appear. Perhaps more clearly than for any other modern issue, the relationship between environmental demands and individual freedom highlights
the potentially diverging trends within societies which place a high priority on individual freedom but which have still attempted to correct social injustices with the means typical of the welfare State. A synthesis of these trends by no means appears impossible, although the political process regulating the delicate balance will no doubt require particular discipline. It is clear that certain environmental measures will have to be paid for by the State, and it is also clear that blatant abuses of ownership rights at the expense of the environment will not be legally tolerated in the future. Reference to philosophical schemes developed in the past will not suffice if the proper middle course is to be found, although philosophical premises will have to be kept permanently in mind in the practical discussions lying ahead. The schemes described above reflect various philosophical nuances. Laying the emphasis on one of them against another or blending several of them together will require more political consensus and sometimes more legal ingenuity than has been shown in the past.
Footnotes

1 See the official Norwegian collection of judicial decisions Rt. 1914, p. 205, concurring vote of Judge Siewert, approvingly quoted in Rt. 1918, p. 403.

2 A brief and concise survey of the major historical developments in the area of property law is found in Scheuner, Die Garantie des Eigentums in der Geschichte der Grund- und Freiheitsrechte, in: Staatslehre und Staatsrecht. Gesammelte Schriften (Listl and Rüfner, eds. (1978), pp. 775-810. See also Gonnard, La propriété dans la doctrine et dans l'historre (1943).

3 See, for instance, Just v. Marinette County, 56 Wis. 2d 7, 201 N.W. 2d 761 (1972).


6 For the United States, see Note, "Zoning", 91 Harvard Law Review 1978, 1427-1708, at 1464. B. Ackermann, Private Property and the Constitution (1977), p. 217, n. 54, lists about 20 cases dealing with legislative wetland regulations. The courts have been almost evenly divided in their judgments upholding or rejecting these laws. In France, an effort was made in 1967 to reconsider the broad issue of compensation (J.O. deb. Sénat Nov. 10, 1967, pp. 1201-1202), but so far no definite conclusions have been drawn.

7 Ackermann, op. cit., n. 6, passim; see also Note, "Zoning", 91 Harvard Law Review 1978, 1427-1708, at 1492; "Fairness requires that individuals be treated not merely as means to social ends but rather as persons who deserve respect as ends in themselves". This extensive study with its excellent documentary notes currently provides the best survey of the American law on the subject; the present author's presentation of U.S. law relies strongly in parts on the "Note" which covers more than 280 pages. Some of its arguments and conclusions, however, may not withstand critical analysis.

8 It is remarkable in this context that Art. 20 of the French Law Regulating the Protection of Nature, enacted July 10, 1976, enlarges the scope of governmental activities, but grants compensation in certain cases where the old law would have refused it. See Prieur/Henriot/Rossillon, Servitudes de Droit Privé et de Droit Public (3rd ed., 1976), p. 278. The most intense discussions on the relationship between private property and the future environment have been in the United States. Both the relative breadth of individual freedom as reflected in traditional property law and the relative strength of the American environmental movement may help to explain this development. Because of the advanced state of the discussion in the United States, the present study draws
strongly upon recent and traditional American literary arguments and judicial reasoning. The two major studies which have influenced the development of the law in the past twenty years particularly strongly are Sax, "Takings and the Police Power", 74 Yale Law Journal 1964, 36, and Michelman, "Property, Utility, and Fairness: Comments on the Ethical Foundations of 'Just Compensation' Law", 80 Harvard Law Review 1967, 1165. Sax has considerably modified his original view, in "Takings, Private Property and Public Rights", 81 Yale Law Journal 1971, 149-186; nevertheless, his first version may still be more persuasive for courts and commentators today than his second. Neither Michelman nor Sax have directly addressed environmental issues, but the implications of their arguments for environmental cases can, in principle, be easily perceived.


10 Apart from Mosler (ed.), Staat und Privateigentum (1960), there is a striking lack of comparative studies dealing with the constitutional dimensions of libertarian property law. For some helpful references, see Merryman, "Ownership and Estate", 48 Tulane Law Review 1974, 916; see also Kaden, "Der Eigentumsbegriff in rechtsvergleichender Betrachtung", 2 Zeitschrift für Rechtsvergleichung 1961, 193. It is also noteworthy in this context that the European Communities have so far made no attempt to rewrite Art. 220 of the Treaty of Rome which states that the laws governing property are not affected by that Treaty; see Everling, "Eigentumsordnung und Wirtschaftsordnung in der Europäischen Gemeinschaft", in: Festschrift für L. Raiser (1974), pp. 379-401. The protection of property as formulated in Art. 17 of the General Declaration of Human rights has not been explicitly restated in the U.N. Covenants on Human Rights. The international differences concerning the function and role of private property stood in the way of agreement. But see also Art. 1 of the Additional Protocol to the European Convention on Human Rights.

11 The comparison of elements of public law requires even more detachment and analytical prudence than the study of the private laws of different legal orders. For some basic issues involved in comparing social philosophies, see for instance Grimm, "Soziale, wirtschaftliche und politische Voraussetzungen der Vertragsfreiheit", in: La formazione storica del diritto moderno in Europa, Atti del terzo congresso internazionale della società italiana di storia del diritto. Vol. 3 (1977), pp. 1221-1248, at p. 1224.

12 For a recent survey of the status of individual rights and the role of constitutional courts in various European countries, see 5 Europäische Grundrechte Zeitschrift 1978, 426-510; see also Mosler (ed.), Verfassungsgerichtsbarkeit in der Gegenwart (1962).

13 For a case of this kind see a decision by the Norwegian High Court, 138 Norsk Rettsidende 1973, 705. An Icelandic Court had to decide the question whether compensation is due to a farmer on whose land wild birds had nested for a long time; the birds were being kept away by an endangered species of eagle protected under Icelandic law; the court granted compensation, see Hrd. XXXVII, p. 54. On Icelandic law in general in this area, see G. Jörundsson, Um Eignarmána (1969); O. Johannesson, Stjornskipun Islands (2nd ed., 1978), pp. 447-453.


15 See Colliard, Libertés publiques (5th ed., 1975), pp. 737-746. See in particular pp. 739-740: "(…)lorsque la puissance publique n'intervient pas sous la forme d'un transfert forcé de propriété, mais sous la forme d'une réglementation du droit de propriété, alors aucune procedure particulière n'intervient: La propriété est une liberté publique comme les autres. Cette solution assez curieuse s'explique historiquement en France par fidélité à la conception révolutionnaire dominée par deux idées: celle de la souveraineté absolue de la nation, pouvant réglementer le droit de propriété, comme tous les droits si fondamentaux qu'ils fussent, par ailleurs proclamés, et celle du respect de la propriété privée, sacrifiée jadis sous l'Ancien Régime et qu'explique, en matière de transfert patrimonial, la composition même éminemment bourgeoise, des assemblées révolutionnaires". From a comparative viewpoint, it appears remarkable that most French textbooks on individual rights (libertés publiques) do not even mention property rights.
In the area of urban planning, governmental measures do not in principle give rise to compensation claims by affected property owners; see Art. 80 of the Law of June 15, 1943, and Art. 160-5c of the present Code de l'urbanisme; this has been confirmed by the courts, see e.g., Ministère de l'équiment v. Soc. anony. "Constructions Simottel", Conseil d'État, March 4, 1977; Ministère de l'équiment v. Consorts Guillerot, Conseil d'État, March 4, 1977. Exceptions have, since 1943, been allowed by the legislature only in those cases in which the prior state of the property has been affected in a manner resulting in "direct, material and certain" damage, and, since 1967, in cases of actions impairing vested rights. See Recueil Dalloz-Sirey 1977, p. 206. Informations rapides. The notion of "direct, material and certain damage" has been judicially interpreted in a remarkably narrow fashion, see Ministère de la Construction v. Consorts Leroy, Conseil d’État, Febr. 8, 1963.

Cf. the legislative decisions quoted in Prieur/Henriot/Rossillion, op. cit., n. 8, pp. 207, 209,213, 218,221,226,227, 234, 240,246, 248, 259, 267, 271, 279. See the examples noted in "Protection et aménagement des espaces verts". Documentation française. Environment 1973. See also Vidal, "Servitudes d'urbanisme et expropriation (Loi du 31 décembre 1975, Article 38)". Recueil Dalloz-Sirey 1976, 111, 113: "Cette anarchie engendre l'injustice. Les servitudes d'appui, d'ébranchage ou de passage pour la distribution de l'énergie électrique sont indemnisables; les servitudes d'urbanisme ne le sont pas. Est-il plus dommageable de supporter une console sur son mur ou de ne plus pouvoir bâtir sur son terrain? Seulement les textes, insensibles à cette évidence, répondent que dans le premier cas, le dommage est certain et que, dans le second, il n'est qu'éventuel. Tout indemniser serait absurde: que l'indication du nom des rues et le numérotage des maisons n'ouvrent pas droit à indemnité, qui peut le contester? Mais du moins l'art. 38 de la loi du 31 déc. 1975, par son injustice même, rappelle la nécessité d'une réforme raisonnable des servitudes légales."

The Constitutional Court in the Federal Republic of Germany has stated that it views the notion of property "as it has been shaped by civil law and by the views of society"; BVerfGE 1, 264: a similar formula is used in BVerfGE 20, 351. According to the Bundesgerichtshof, the borderline between regulation and a taking changes "parallel to economic and technological developments", BGHZ 60, 135.

The quantitative and qualitative aspects of environmental problems are of recent origin, but environmental problems themselves have had to be dealt with by the law at least since the 19th century. In 1867, the Wisconsin legislature instructed a commission to inquire "whether, owing to the want of information on individuals and the shortness of their lives, it is the duty of the state to interpose its authority to prevent an undue destruction of forest trees where they now exist, and to encourage their cultivation where they are deficient". Citation from Hurst, Law and the Conditions of Freedom in the Nineteenth Century United States (1956), p. 100.

The preparatory work for the new Swedish Constitution was being done in 1976, the Farmer's Association pointed out that compensation is paid when an electricity pole is erected in a farm area, but that compensation is not granted (according to a legislative decision of 1973) when the owner of that land is forbidden to extract gravel from his land, see Regerings proposition 1975/76: 209, at 256. Contrary to the argument apparently used by the Farmer's Association, it is not fully convincing, on the basis of these two cases, to view the physical invasion test as a main criterion. Approaches other
than this test reach the same results in these two cases. In general, Swedish law is highly complex in this area. Not only does the Constitution refer, for matters of compensation, to the specific laws which order the expropriation “or other similar measures” (Chapter 2, Paragraph 18), without giving any explicit constitutional standards as to the minimum substance of these laws, but also a judicial right to set aside legislative acts violating the Constitution has been recognized in this area only in cases in which the conflict between the law and the constitution is “evident”. The difficulties are compounded by the Constitutional provision which stipulates that individual rights, such as the right to compensation, may be restricted as long as the rules governing a democratic society are not thereby infringed (§12 section 2). For a useful summary of Swedish developments up to 1976, see Brunfelter/Svegfors, Grundlag och Egendomsskydd (1977); see also Förstärkt skydd för fri- och rättigheter, Betänkande av rättighetsskyddsutredningen (1978), p. 209.

27 At the end of the 18th century, Blackstone defined property as “that sole and despotic dominion which one man claims and exercises over the external things of the world, in total exclusion of the right of any other individual in the universe”. Blackstone, Commentaries on the Laws of England in Four Books, Vol. 2 (1791), p. 2. In similar vein, Art. 17 of the French Declaration des droits de l’homme et du citoyen states: “La propriété étant un droit inviolable et sacré nul ne peut en être privé, si ce n’est quand la nécessité publique, légalement constatée, l’exige évidemment et sous la condition d’une juste et préalable indemnité”. According to Art. 544 of the French Civil Code, property is defined as “le droit de jouir et de disposer des choses de la manière la plus absolue, pourvu qu’on n’en fasse pas un usage prohibé par la loi et les règlements”. In reading this often-quoted formula, it must not be overlooked that the substance of property rights is subject to legislative definition.

28 For the Federal Republic of Germany, see A. Erler, Maßnahmen der Gefahrenabwehr und verfassungsrechtliche Eigentümer (1977). Kreft, in a review of Erler, DVBI. 1978, 1009, seems to suggest that this traditional rule might have to be reconsidered; as a judge and literary commentator, Kreft has considerably influenced German developments in past years. See also the differentiating approach suggested in BVerwGE 50, 49.


30 This generally recognized formula has been used in Art. 97 of the Code administratif communal. On the relationship between property and the police power in France, see Colliard, op. cit., n. 15, p. 748.


32 See also Note, “Zoning”, 91 Harvard Law Review 1978, 1427-1708, at 1443-45. A zoning measure was intended to preserve the “charm (of) a New England small town” and pursuant to the police power has been upheld, see Steel Hill Dev. Inc. v. Town of Sanbornton, 469 F. 2nd 956, 959 (1st Cir., 1972). See also Village of Belle Terre v. Boraas, 416 U.S. 1 (1974).


34 Just v. Marinette County, 56 Wis. 2d 7, 201 N.W. 2d 761 (1972), discussed in Bosselmann/Callies/Banta, The Taking Issue (1973), pp. 217-221.

35 Mugler v. Kansas, 123 U.S. 523 (1887); the decision was reached in spite of the court’s assertion that it would strike down a law enacted pursuant to the police power if it had no “real or substantial relation” to public health, morals or safety and amounted to a “palpable invasion of rights secured by the fundamental law” (at 661).


37 The U.S. Supreme Court stated in Commonwealth v. Alger, 61 Mass. (7 Cush.) 53, 84 (1853) that property is held “under the implied liability that (its) use ... may be so regulated, that it shall not be injurious to the ... rights of the community”. But the courts in general have found it too difficult to establish, on a theoretical level, which uses are “offensive to the public” and which are not. Moreover, various types of re-
gulation which do not even aim at preventing "noxious" uses have never been subject to the payment of compensation in the past. The limitations on the analytical value of the "offensive use" test become apparent in a case which has occupied the courts over a long period of time and which keeps troubling judges today: a pig stable (or brick factory) which was built in an isolated area gradually becomes surrounded by urban projects and is finally considered by the inhabitants of the area to be a noxious place. Traditionally, the owner of the pig stable (or brick factory) was not granted compensation when the State prohibited continued use, see, e.g., for the United States, Hadachek v. Sebastion, 239 U.S. 394 (1915), or, for the Federal Republic of Germany, OVG Münster, OVGE 11, 250. It remains to be seen whether this judicial preference for urban development at the expense of green spaces (in the case of farming land) will be modified in the future; for recent developments in the Federal Republic of Germany, see Schenke, "Neues zum Schweinemästerfall", JuS 1977, 789; Bross, "Umweltbelastende Betriebe und Eigentumsschutz", DÖV 1978, 283. The corresponding legal developments in Switzerland have been examined by Hubertus Schmid, Die Unterscheidung zwischen wirtschaftspolizeilichen und wirtschaftspolitischen Maßnahmen im schweizerischen Recht (Diss. St. Gallen 1974); Jost, Die neueste Entwicklung des Polizeibegriffs im schweizerischen Recht (Diss. Bern 1975).

39 In his first essay, loc. cit., n. 8, Sax focussed mainly on the active or passive role of the government. Whenever the government regulates potentially conflicting uses of private property, no compensation is due according to the concept which ab initio characterizes property as being those rights which remain after governmental regulation of competing uses. Thus, compensation must be paid only when the government acts for its own benefit by initiating or expanding an entrepreneurial activity. In his second essay, Sax did not fully abandon his original version, but placed much stronger emphasis on the existence of negative "spillover" effects emanating from the regulated property.

40 As long as the danger does not reach such a level, the term police power seems to be too narrow to include the State’s right to restrict property for other reasons. In Europe, the notion of the “police” power has been used in too precise a way to leave much room for interpretation. It appears that the present use of the term in the United States has its historical origin in a narrower concept which gradually broadened. The traditional connotations of the “police” power might suggest, at least for those not aware of the details of constitutional history, a scope for governmental activities which may be too narrow from an environmental viewpoint. It would appear more helpful to use terminology which relates more directly to notions of property.


42 "Government could hardly go on if to some extent values incident to property could not be diminished without paying for every such change in the general law". Pennsylvania Coal Co. v. Mahon, 260 U.S. 393, 413 (1922).

43 The French legislature has, on several occasions, simply decided that the owner has a right to be expropriated when the measures reduce the regular income flowing from the property by more than 50%; see Prieur/Henriot/Rossillion, loc. cit., n. 8, pp. 240, 279.

44 See, e.g., U.S. Supreme Court, Penn Central Transportation Co. v. City of New York, 98 S. Ct. 2646, 2659 (1978). The present author has found no judgment in which a slight diminution in the value of private property as a result of governmental actions was considered compensable without further aggravating elements.


46 Justice Holmes warned in 1922 of the "danger of forgetting that a strong public desire to improve the public condition is not enough to warrant achieving the desire by a shorter cut than the constitutional way of paying for change". Pennsylvania Coal Co. v. Mahon, 260 U.S. 393, 416 (1922).

47 As to the future general compatibility of environmental strategies with liberal democracy, see Beckermann, Two Cheers for the Affluent Society (1974), p. 36 and Pavitt, "A European View of the 'Environmental Crisis'", in: Axtmann (ed.), Rescuing...
Man's Environment (1972), p. 129. From a strictly environmental viewpoint it has also been argued that the present institutional liberal arrangements may have to be changed in the future in order to assure an adequate development of the environment; see, e.g., F. Hirsch, Social Limits to Growth (1976), or Ophuls, Ecology and the Scarcity of Politics (1977). A strictly libertarian approach is found in Nozick, Anarchy, State and Utopia (1974), p. 79; see also Buchanan, The Limits of Liberty (1975). As this essay hopes to show in a limited, albeit highly important field, legal thinking does not require radical solutions in favour of one or the other point of view.

Environmentally motivated zoning ordinances may, for instance, in effect exclude economically disadvantaged people from socially desirable areas. Looking at motives rather than effects, it cannot be doubted that zoning has become a broad instrument of social policy. Any legal policy dealing with zoning must reflect the fact that environmental considerations are often only one element among the motives for zoning laws. In this context, it must also be recalled that in some cases environmental demands conflict with one other; this will be the case, for example, when public access to sensitive areas is regulated.

48 See, particularly, the landmark case BGHZ 6, 270 (1952).

50 The Bundesgerichtshof in the Federal Republic of Germany has not abandoned its doctrine of individual sacrifice, but has substantially modified it by including considerations relating to the economic gravity of the impact upon the owner. See, e.g., BGH JZ 1979, 98; for Switzerland, see BGE 98 la 384. The German Court has increasingly used a formula which states that compensation is only due when the "legal position" of the owner has been affected, see, e.g., BGH BayVBI. 1979, 91. This approach is subject to criticism because of its circular nature; the courts themselves determine the precise scope of property rights.


52 An immediate threat to the public welfare will validate the exercise of the police power, see supra pp. 35-36.

53 One particular form of the balancing test has been elaborated by Michelman, loc. cit., n. 8, 1208. The scales on which Michelman weighs up the individual and the public interests are set according to the utilitarian scheme of values. His scheme calls for compensation when the social efficiency gain flowing from the regulation weighs heavier than the sum of (1) demoralization costs thereby imposed upon the individual concerned and on the public and (2) the costs stemming from the administrative settlement required by the terms of governmental compensation schemes, and where, in addition, the settlement costs are less than the demoralization costs. An evaluation of this test depends heavily, of course, upon the philosophical position with regard to the concept of "social efficiency gain" under contemporary conditions; moreover, concise judicial measuring of demoralization costs and settlement costs will generally be a difficult if not unmanageable task. The strength of this balancing test lies in its principle-oriented abstract clarity and, for discussion purposes, in its corresponding power to contrast the premises and results of other concepts.

54 See, e.g., Bosselmann/Callies/Banta, op. cit., n. 31, p. 260. These authors have also pointed out (at p. 255) that it would be beneficial for environmental zoning purposes if a standard were used under which only a physical invasion of the property in question would require compensation. See also Steiger, supra, pp. 14-15.


56 Among the more recent cases, see, e.g., Penn Central Transportation Co. v. City of New York, 98 S. Ct. 2646, 2661 (1978); BVerfGE 45, 82, 168.

57 In the United States, this formula was used in C.F. Lytle Co. v. Clark 491 F. 2d 834, 838 (10th Cir. 1974); for the Federal Republic, see BGHZ 23, 30; 57, 178; 60, 126. In Norway, § 32 of the Building Act of June 18, 1965, is built on the same foundation. The prohibition without compensation of salmon fishing from properties on a river
estuary has been upheld by the Norwegian High Court (Rt. 1973, p. 705), whereas the conservation of a forest area was deemed compensable (Rt. 1978, p. 442) because in the latter case all rights over the area were taken from the property owner; generally on the development of Norwegian law, see Fleischer, *Grunnlovens grønser* (1968); Fleischer, *Bygnings- og reguleringsrett* (3rd ed., 1976).

58 BGH DVBI. 1957, p. 861. In France, the Code Forestier has not provided for compensation in those cases where the felling of trees in forests is prohibited for environmental reasons, see Prieur/Henriot/Rossillion, *op. cit.*, n. 8, p. 233; in a comparable situation relating to natural monuments, compensation is granted in cases of "direct, economic and certain" damage, *ibid.*, p. 269.

59 Michelman (*loc. cit.* n. 8, p. 1223) has suggested, from the viewpoint of individual fairness, that no compensation is required "so long as the disappointed claimant ought to be able to appreciate how such decisions might fit into a consistent practice which holds forth a lesser longrun risk to people like him than would any consistent practice which is naturally suggested by the opposite decision". Obviously, the vagueness of such a standard poses problems for its practical use, but this formula might perhaps in many cases yield results similar to those reached under the "situational commitment" doctrine.

60 Corte Costituzionale, January 20, 1966, n. 6, Nov. 23, 1967, n. 119. In this major decision, the Court stated that, as a general test, no compensation is due when the law in question establishes a general category of property rules to which all concerned owners are subject. Contrary to the French law, supra n. 16 and 18, this approach is modified by an economic impact test. "Therefore a taking must also be assumed when the measure ... deprives the property right of its substance. This will be the case if the use of the property is so intensely affected that it can no longer be used in accordance with its inherent purpose or if its market value is greatly reduced" ("... una penetrante incisione del suo valore di scambio").


62 Lower courts in the United States have referred to the "suitability of the land" for the uses permitted by zoning ordinances. See n., "Zoning", 91 *Harvard Law Review* 1978, 1427-1708, at 1496, n. 156. The apparent similarity between such a test and the German doctrine deserves particular attention from an environmental point of view.

63 Kant's notion of property has played a certain role in the recent American discussion. Luf, in *Freiheit und Gleichheit* (1978), pp. 70-132, has correctly pointed out that Kant's reasoning concerning property was, on some points, directly addressed to the specific issues of his day. Of course, the basic direction of Kant's ideas has not lost its validity simply by virtue of the changed circumstances.
Cost Apportionment Principles in Environmental Protection

by Karl-Heinrich Hansmeyer

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2. The polluter-pays principle as a mechanism for cost attribution and for allocation
3. The common burden principle
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1. Environmental pollution - a problem of allocation

From the economic point of view the term "environmental pollution" describes a state of scarcity: the environment, too, is a scarce economic asset. The problem always associated with assets such as these, available only on a limited scale, is how they are to be divided up between the competing types of use made of them. Environmental policy, therefore, implies a problem of allocation. This consists above all in the fact that, because the costs of using the environment are either non-existent or too low, individual costs and costs to the economy as a whole are not at all comparable, and the opportunity costs are not reflected in the prices of goods; thus production methods which make heavy use of the environment tie up relatively too many production factors, with the result that the environment is overused.

In economic theory effects of economic processes which pollute the environment are usually explained in terms of Alfred Marshall's theory of external effects. Firstly, one can say that the actual scarcities of environmental assets or uses of the environment are not reflected by the market; hence the users largely treat them as free assets. This then leads to negative external effects if unplanned
and generally undesired restrictions on private production and consumption result. In this context "external" describes a quite ambivalent state of affairs. On the one hand those affected, who have to tolerate a reduction in personal welfare as a result of the use made of the environment or its pollution, did not participate in the decision-making process leading to the pollution (those who were involved in the process externalize part of their costs); on the other hand, those affected may be quite willing to accept the reduction in welfare in return for other assets or benefits (e.g. jobs).

Hence, according to welfare theory the call for an absolutely clean environment, i.e. of a total cessation of use of the environment, cannot be justified. Nevertheless, the existence of negative external effects means that there is an increasing trend away from the economic optimum and thus an endangering of the economic as well as of the ecological system. The persons or entities calculating according to economic principle make ever-increasing demands on the environment, which as far as they are concerned is a free asset, such that lasting reductions in quality result. Hence the absence of effective feedback processes, which would immediately signal an undesirable use and apply sanctions to its consequences, is the causal factor in the overuse of the environment and the resulting misallocation. If the "environment" were a private asset and assuming rational behaviour, it is certain that there would be no overuse because the consequences thereof would affect the owner directly and compel him to correct his misbehaviour and misuse.

Accordingly, a clean environment is obviously a public asset. It is, therefore, also a political task to solve the allocation problem, i.e. to correct the misallocations which the market cannot correct by itself or, if it can, then only belatedly. Economic theory is also in agreement with this in taking as a premise the concept that the State must intervene with an allocation policy and must include the quality of the environment as an independent variable in the welfare function. It must fix a "price" for uses of the environment which corresponds in theory to the complete supplementary social costs or the marginal costs of abandoning the use at the optimal point as far as the quality of the environment is concerned.

2. The polluter-pays principle as a mechanism for cost attribution and for allocation

Hitherto the argument has run as follows: a misallocation in the form of an overuse of the environment would not occur if the polluter of the environment had to bear the full costs or repair all the damage himself. Given rational behaviour the consequence would be a change in conduct in order to avoid these "costs". The real consequence is obvious. A mechanism must be found to make up for this previously missing internalization process and thus to simulate to an extent the missing market force. This is the concept which underlies the polluter-pays principle. "Polluter" has a quite pragmatic meaning in this context. It is certainly not a question of looking for the "final polluter" nor for some culprit, but for the person to whom the costs can technically best be attributed, the person who one assumes will be most likely to change his behaviour with the aim of reducing environmental pollution having taken the individual cost/benefit relationships into account. For these reasons the
polluter-pays principle will mainly be applied to the field of production. Production and products making heavy use of the environment will in particular be made relatively more expensive by the imposition of charges; in the long term changes in the supply and demand structures will also occur in the market process as a result of the change in relative prices.

Two attribution problems must be solved when the polluter-pays principle is applied: the "polluter" must be ascertained and circumstances relevant to the environment must be ascribed to him, and, in addition, he must be charged in full for the negative external effects or costs caused by him. The first problem cannot be solved if a polluter cannot be found or can no longer be found, either because so-called old pollution is involved or because the sources or pollutants are too numerous, so that the required information cannot be obtained. In these cases the costs must be charged to the public as a whole.

In contrast to these more technical problems, the second group of attribution problems are of a fundamental kind. Theory requires that in principle all negative external effects and all supplementary social costs should be attributed in order that optimal allocation conditions be restored. The concept of costs is a comprehensive one and embraces all abandoning of aims which occur or may occur as a result of environmental pollution. It is clear at once that the ascertain-

ment and evaluation problem is insoluble, firstly because the dilemma of inter-

personal comparisons of benefit arises and, secondly, because the extent of

many cases of damage does not become evident until later or because the
damage is caused by the interaction of several pollutants and factors. Hence an
environmental policy based on the polluter-pays principle will have to reduce its
expectations; if all the cost of the damage cannot be determined, an attribution
of the purely monetary costs of prevention or elimination will generally have to
suffice. Thus, a price is fixed for use of the environment which corresponds to
the private costs of abandoning the use of the environment, where the abandon-
ment is regarded as politically necessary.

The polluter-pays principle is thus interpreted pragmatically, but its true
meaning in the overall economic context is still retained. The necessity to pay a
charge for the use of the environment creates a feedback process, which leads to
an account also being taken of environmental assets in the individual's
cost/benefit calculations, and thus to behaviour more compatible with the en-
vironment. This can be achieved in the production process by technological
innovations and subsequent elimination facilities, but it can also be achieved by
a reduction in the sales of those products which have been made more expensive
by the attribution of costs. However, environmental policy and allocation policy
considerations make it very important to delimit the situations in which a charge
is fixed by the State, so that one is not merely replacing one form of environ-
mental pollution with another. Such would be the case, for example, if air
pollution were to be eliminated by flue gas scrubbers but a new effluent problem
were to arise at the same time, or if the amount of waste were reduced by refuse
incineration, but air pollution were to increase.

In principle, the cost of prevention and/or of elimination can be charged in
different ways. Firstly, it is possible to bring about investments in prevention by
means of directives of all kinds. This method, which most closely corresponds to
the traditional idea of the factory inspectorates, of course, always encounters the problem of proof. Anyone issuing directives must prove that these can also be complied with. This is particularly difficult where complicated production processes are concerned; the discussion of the “state of the art” illustrates the difficulties. By contrast, the tax solution is far more elegant and also less problematic from the point of view of regulative policy. There is merely an obligation to pay tax; the undertaking is responsible for how it deals with that obligation, i.e. reducing or even eliminating it completely by taking suitable measures. There is no intervention in processes inside the plant; on the contrary, the environmental tax provides the previously missing motivation for encouraging behaviour compatible with the environment by making such behaviour “profitable”.

It is unnecessary to emphasize that wherever the negative external effects tend “towards infinity” (i.e. poisons), neither taxes nor directives, but rather straightforward bans are the appropriate instrument.

3. The common burden principle

We have already observed that whenever the polluter cannot be ascertained and the environmental aim is nonetheless to be pursued, elimination or prevention measures must be financed out of public funds. This common burden principle does not distribute the burden of investment in the environment and running costs via the market (the polluter-pays principle), but in accordance with tax burden distribution. One will not go into the question of which distribution principle is the fairer, but what is decisive, however, is that the common burden principle does not solve the problem of misallocations. If the State eliminates environmental damage by direct investments or subsidies, there is no incentive for the “polluter” to reduce environmental pollution; the feedback effect established by the polluter-pays principle is lacking. One can even take the argument further. If the State undertakes clean-up measures either directly or by subsidies, this could also lead to an increase in activities polluting the environment, because the disposal problems have now been taken over by the community as a whole. However, this weakness of the common burden principle from the point of view of allocation policy should not obscure the fact that it is nevertheless an important basic principle of environmental policy. Its application is not restricted merely to the case mentioned above of the missing polluter. It is also appropriate where it is not possible to change patterns of behaviour which cause environmental pollution (e.g. domestic effluent). Here the polluter-pays principle also loses its function in terms of allocation policy and only the distribution policy function remains, so that here, in deciding between the two principles, the decision must be based on distribution policy considerations. In addition, the great significance of the common burden principle lies in its capacity for reducing conflict.

Wherever the polluter-pays principle cannot fully be applied, e.g., because the aim of full employment would be jeopardized, it can be supplemented by forms of finance based on the common burden principle. Only a mention will be made here that, for example, mixed forms are possible, where measures designed to protect the environment are initially financed by taxes (the common burden principle) and where “repayment” is made by the polluters in the second phase.
Of course, a pre-condition for such a procedure is the establishment of independent funds able to carry out such transactions.

4. Mixed strategies for reducing conflict

As in many other countries, in the Federal Republic of Germany a characteristic set of instruments, including in varying degrees elements of the polluter-pays and the common burden principles, has developed for the individual sectors of the environment. For example, waste is largely eliminated by cost-covering charges based on the polluter-pays principle: the clean air policy makes use in particular of directives, emission and immission standards, i.e. it is similarly based mainly on the polluter-pays principle. Systems of directives have also traditionally been predominant in the prevention of water pollution; in addition, an effluent tax will be levied from 1981 onwards. On the other hand, measures to combat noise pollution are largely carried out directly by public authorities, because sound insulation measures fall mainly to be taken in the road construction and town planning area. Hence it is the common burden principle in the form of autonomous public elimination measures which predominates here.

However, the common burden principle as a supplementary and supporting measure has also played a more or less important role in all the other sectors of the environment mentioned above, or is increasingly beginning to play such a role in the light of increasing conflicts with economic aims. There are tax concessions in the form of special depreciation allowances under income tax legislation for private investment in environmental protection, and cheaper credit and grants from various assistance programmes. Local authorities receive a particularly large amount of assistance from general state budgets in constructing their sewage plants and main drainage systems. With such assistance from public funds, really running counter to the maxim of the polluter-pays principle which is also valid in the Federal Republic of Germany, policy has, at an early stage, already taken account of the fact that a puristic introduction of the polluter-pays principle would not stand much chance of success in the strained field of differing political interests and forces.

If one does not wish to lose the efficiency of an allocation policy and the success of an environmental policy, however, the polluter-pays and common burden principles should not be seen as alternative instruments. The common burden principle cannot replace the polluter-pays principle. Setting aside the cases which have already been mentioned where, for example, the polluters cannot be found and State facilities have to be created to protect the environment, from the point of view of efficiency, grants, subsidies and other public assistance can only have a supplementary character, i.e., they can only be applied alongside already existing instruments to deal with the polluter and in the same regulative field. Subsidies inspired by environmental policy cannot by themselves eliminate the traditional profitability dilemma in environmental protection of private investment in elimination measures. Such investments to protect the environment do increase the fixed assets of private undertakings, but they leave the production result basically unchanged, with the result that, all things being equal, profitability falls. Hence, only the cost dimension of investment in elimination measures appears in the business calculation while the operating profit component is missing. An incentive to invest in environmental protection can, there-
fore, only be created by subsidies if a 100% refund or acceptance of costs is envisaged. If subsidies and other transfers below this limit are to take on a control function, a sanction mechanism must first be created by directives or taxes, a mechanism which either prescribes mandatory investment in the environment and thus also the acceptance of environmental protection costs, or one which introduces the profit dimension in such a way that carrying out elimination or preventive measures contributes to a saving in taxes which would otherwise be payable. Without this mechanism subsidies will generally only produce “windfall profits”. Those people who, for whatever reason, are in any case planning investment in environmental protection, will take the subsidy or grant as a “bonus”.

In its 1978 Report on the Environment (pp. 551 et seq.), the German Council of Experts on the Environment extensively analysed and examined what limits are imposed on the implementation of a systematic and exclusively polluter-oriented environmental policy by reason of the socio-economic and political framework, and to what extent environmental policy must rely on compromises made with other sectoral policies. The compromise strategies raised there lay emphasis on the common burden principle for a great variety of different reasons.

At the level of fixing political goals, due to the lack of concreteness and precision in the determinations made, there is usually no weighing up of ecological, economic and other aims, or at any rate there is no evidence of such a weighing up. Hence the compromise must usually be found at the operative level and in the execution. The most frequent case is probably that in which instruments of environmental policy based on the polluter-pays principle (i.e. directives or taxes) are created from the outset without the effectiveness or power of intervention which would be necessary to achieve the levels of environmental quality envisaged. Here private incentive to carry out environmental protection measures on the necessary scale can be increased by assistance from public funds.

Environmental policy is in the same position if instruments which are effective enough for dealing with the polluter are adopted and made available for political action, but compromises are brought about by deficient execution out of regard for other sectoral policies. If it is ultimately possible to introduce and apply stringent environmental standards and taxes aimed at the polluter, sectors or regions particularly hard hit will generally receive compensation, bridging or adjustment aid from public funds, for reasons of general economic and structural policy.

Finally, the significance of mixed political instruments for environmental policy also results from the fact that environmental policy itself cannot ignore the distribution problems. The pure polluter-pays principle is an allocation principle, which attempts to simulate the market and is, therefore, based on efficiency, but it need not by any means automatically conform to the prevailing concepts of fairness. In the same way as market results are influenced and modified by distribution corrections in virtually all sectors, it will not be possible to distribute environmental assets and uses of the environment exclusively on the basis of criteria of efficiency. To this extent one must agree with the conclusions of the German Council of Experts on the Environment, which, in its 1978 Report (p. 505) mentioned above, stressed that, “It is therefore not surprising if
in the final analysis the environment is subject to the same political principles. In the search for a compromise between efficiency and fairness of distribution, it too will probably have to rely to an ever increasing extent on the application of mixed forms of instruments which take both aspects into account. It remains to be seen whether this emphasis on 'fairness' will serve economic efficiency and thus benefit those whom it is designed to favour."

Whatever the relationship between the political significance of the polluter-pays principle and its chances of being implemented, one thing should once again be stressed. In the interests of an economically as well as an ecologically efficient environmental policy, the common burden principle cannot be regarded as an alternative to the polluter-pays principle. Cost internalization with the polluter must remain in principle. The common burden principle (grants and subsidies) can only attain a supplementary significance, in order to influence the consequences of operative directives and/or taxes based on a very great variety of political considerations and aims.
Footnotes

2 Siebert, Ökonomische Theorie der Umwelt (Tübingen, 1978).
3 To quite another conclusion leads the approach of Coase. See Coase, "The Problem of Social Cost", 3 Journal of Law and Economics 1960, 1 et seq.
4 As to the differentiation of "Costs" see: Council of Environmental Quality, Environmental Quality - The fourth annual report (Washington, 1973), chapter 3.
7 The "announcement effects" of this effluent tax (Abwasserabgabe) have been empirically analysed by the Public Finance Research Institute at the University of Cologne. See for instance: Hoffmann, Ewringmann, Auswirkungen des Abwasserabgabegesetzes auf Investitionsplanung und -abwicklung in Unternehmen, Gemeinden und Abwasserverbänden (Bonn, 1977).
8 Ewringmann, Hoffmann, Kriterien und Problematik der Schwerpunktförderung - Das Beispiel Rhein (Beiträge zur Umweltgestaltung A 65, Berlin 1978).
Government Financial Incentives
for the Protection of the Environment

S. De Kock

My special thanks go to H. Smets, A. Alexandre and J.-P. Barde of the Directorate of the Environment of the OECD for detailed information and interesting discussions on these problems. Most of the information in this article on the practical experience with various incentive systems in different countries is based on work by the OECD.

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Organizing a pollution control policy is costly. The distribution of this financial burden will therefore concern everybody. In most countries some form of government assistance for the abatement of industrial pollution is provided. Apart from such positive incentives which already have widespread support, some countries have introduced or have made plans to start using pollution charges as a system of negative incentives to reduce pollution emissions.

This article will primarily investigate which financial incentives are most frequently used in different countries. An attempt will be made to evaluate different incentive systems in the light of economic as well as social and practical circumstances.

It is assumed that the polluter-pays principle is chosen as the most efficient and the fairest general rule concerning liability. This does not mean that in special circumstances temporary deviations from or exceptions to this principle cannot be tolerated.
I. Negative Incentives

Pollution charges, in combination with pollution standards, are widely advocated by economists. Indeed, they fit in very well with the polluter-pays principle. But their practical application is usually less attractive due to the magnitude of the financial burden they place on the polluting industry.

Different countries, however, have become more and more convinced of the power of this instrument. Consequently, they have introduced or plan to adopt a system of pollution charges. This is primarily the case in the field of water pollution, some forms of air pollution, household waste disposal, waste oil disposal and airport noise.

From an economic point of view, an ideal charge system should satisfy some basic conditions. These will be pointed out first. Thereafter, existing charge systems are evaluated in the light of these conditions.

Assume that the additional damage created by pollution increases in proportion to the amount of pollution emitted. Take the example of water pollution: oil in the sea kills the fish, or makes it unfit for consumption. The assumption made is that the extra fish so infected increases with each additional barrel of oil discharged. If in figure 1 pollution is measured along the horizontal axis, and additional damages (in economic terminology known as "marginal" damages) along the vertical axis, the increasing pattern of the marginal damages is visualized by the upward sloping line OR. Od1 is the damage created by Op1 (the first barrel of oil), Od2 is the damage created by Op2 (the second barrel of oil), and so on.

Such a damage function is e.g. typical for airport noise pollution. According to a British study, a noise level of more than 50 NNI would cause a house price depreciation of 15%, at 45-50 NNI this would be 10%, at 40-45 NNI 7.5%, 35-40 NNI 5%, and at levels below 35 NNI, 0%. Noise damage thus increases with the NNI level. The costs to abate pollution are also assumed to display this pattern. It costs more to clean up the last barrel of oil than the first. According to an American study, the costs of abating water pollution in the U.S. up to 85-90% would be 61 billion dollar. A purification up to 95-99% would cost an extra 58 billion dollar. Total purification would cost an extra 198 billion dollar. This example clearly shows that additional abatement costs tend to increase with the amount of pollution abated. Such a pattern is also expressed in graph form in figure 1. The marginal abatement costs are measured along the dotted vertical line above point P. The abatement curve should be read from right to left rather than from left to right. This follows from the fact that the last unit of pollution emitted is the first to be abated.

The optimal tax rate will equal Ot* per unit of pollution emitted. At this level pollution will automatically be reduced to OP*. Until P* is reached the polluter has the choice between either paying P* RpP as taxes, and no abating, or abating PP* at a total cost of P*RpP and paying no taxes. He will clearly choose to abate the amount PP*, as this costs him much less. However, from OP* onwards, he will prefer to pay a per unit pollution tax of Ot* rather than to abate at a per
unit cost which is from \( P^* \) onwards higher than \( O_t^* \). Note also that the optimal pollution level from an economic point of view is \( O_P^* \). It would not be efficient to abate the next unit because, as can be seen on the graph, this would cost more than the damage it would undo. The economy would as a consequence suffer a loss equal to this difference.

**Figure 1 - Optimal Pollution Level**

The outcome of such a tax policy is as follows. The polluter abates \( P_P^* \), and pays a per unit tax of \( O_t^* \) on the remaining pollution \( O_P^* \). His total cost of such an environmental policy is equal to the surface \( O_t^* R P \): \( O_t^* R P^* \) are paid as taxes to the government, and \( R P^* \) are abatement costs. If the government would have forbidden any pollution above a certain level, say \( O_P^* \), the polluter would have had to pay \( R P^* \), which is less than what he pays under a tax policy. But the question can be raised whether he is allowed to cause \( O_R P^* \) of damage without suffering any cost, or without having to compensate those who bear the damages caused by pollution up to \( P^* \). It is therefore not unreasonable to make the polluter pay a tax on the remaining level of pollution; it will induce him to look for cheap ways to avoid this remaining pollution, and it provides the government with the necessary financial means to compensate pollution victims or to finance research on pollution problems.

One could argue that a uniform per unit tax of \( O_t^* \) on all the remaining \( O_P^* \) units of pollution also imposes on the industry a higher burden than the total damage created by \( O_P^* \), i.e. the rectangle \( O_t^* R P^* \) is larger than the triangle...
The industry thus pays more for its pollution emissions than the damage caused by these emissions. It would, however, be administratively impossible to use a varying tax rate for different pollution units. Moreover, ORP is an additional net loss to the industry though not to the economy; it merely represents a transfer from the polluting industry to the government.

On the basis of this short analysis, the economic rationale of pollution charges can be made clear. Charges induce the polluter to abate the optimal amount of pollution. Moreover, this end is achieved in the least expensive way possible. Those who can abate relatively cheaply will abate greater amounts. Those with higher marginal abatement costs will prefer to pay more tax. For the economy as a whole, this means that total abatement is realized in the most efficient manner. Pollution charges also create a permanent incentive to the polluter to detect and implement the least expensive abatement policy. An additional advantage with charges is that funds are thereby collected. They can be used for environmental purposes, either to finance collective abatement initiatives or to redistribute money to polluters who might otherwise be faced with special difficulties.

From these theoretical considerations it follows that the assessment basis should in the first place be linked to the marginal damage created. In addition - and this cannot be derived directly from figure 1 - it should be the same for all plants in that industry in a particular area. Only if this condition is satisfied will all pollution in the economy be abated in the least expensive way possible. An equal rate for all individual polluters will equalize the marginal abatement costs among different polluters. This is a necessary condition for an optimal policy. The reason for this is that if the costs necessary to abate an additional unit are higher for one polluter than they are for another, it would be less costly for the former polluter to abate less and the latter more. Such a situation cannot be optimal. So, at an optimal position, it should no longer be possible to make such marginal improvements.

Most of the existing charge systems are not so ambitious. Table 1 summarizes the various charge systems used in different OECD countries. Data on the actual amounts involved are not yet sufficiently available. Therefore, only the type of assessment basis and tax rate used, as well as the level of government involvement, are indicated.

On the basis of the theoretical considerations elaborated above, an evaluation will be made of the various tax systems already in use in different countries. The discussion will be centred around the proper assessment basis, the characteristics of an optimal charge rate, and the level of government involvement.

1. The assessment basis for pollution charges

The assessment basis for existing charge systems is seldom the damage created by pollution. The reason for this is obvious. In most cases it is very difficult or even impossible to estimate the damage function. Most charges are therefore based on more indirect indicators. When possible, pollution emissions are used. In other cases, charges are levied on the content of a particular ingredient in a product, which, when used in the production process, is supposed to cause the damage. In other cases again, charges are assessed on a simple flat rate basis.
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<th>BASIS</th>
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<td>Major polluters</td>
<td>Widespread</td>
<td>Party (Norway)</td>
<td>Usual case</td>
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<td>(Fr., Neths)</td>
<td>(Fr., Neths)</td>
<td>(Neths esp.)</td>
<td>According to zone and increasign over time (Fr., Neths)</td>
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<tr>
<td><strong>SO2</strong></td>
<td>Tax on sulphur content of fuels (Norway, Neths)</td>
<td>Japan, Neths (Neths, Norway)</td>
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<td><strong>NOISE</strong></td>
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<td></td>
<td>Junk cars (Sweden)</td>
<td>Local authorities (household waste)</td>
<td>By municipalities (household waste)</td>
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<td>Waste oils (FRG)</td>
<td>Local authorities (household waste), collection districts (waste oils, FRG)</td>
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Let us now examine some practical examples. In the case of water pollution, in France pollution charges for water depend on the weight of pollution discharges. A somewhat similar basis is used in the Netherlands and in the northern part of Belgium. In the United Kingdom, only some municipalities levy a charge for effluent disposal: such charges are expressed in direct terms as the cost of purifying 1,000 gallons rather than in the form of a base unit multiplied by a rate. In Canada, about ten municipalities, covering 20% of the total population, levy charges. They use as a base pollutant weights beyond a given threshold level.

With respect to air pollution, some industries, for example in Japan, the Netherlands and Norway, have been charged. Here, the sulphur content of fuels is used as the assessment basis.

The use of noise pollution charges is increasing rapidly, probably because the determination of the proper assessment basis seems, at least for airport noise charges, to pose less of a problem than is the case with water or air pollution. This is certainly so for airport noise charges. An additional advantage is that in the case of airport noise damage the polluter can easily be identified.

Noise charges are used at the Paris airports in France but on the basis of a flat rate per passenger. Currently, however, plans are being made to alter that basis. Charges are also in existence at various airports, in Japan, and Heathrow airport in the United Kingdom has just started a system of noise charges based on noise damage. In the Netherlands, a general scheme involving both aircraft and traffic noise is now under consideration. In the United States, the Council on Wage and Price Stability recently produced a report which urged the use of noise charges to reduce airport noise. In most of these programmes, the assessment basis will be that of noise damage. In the Federal Republic of Germany, landing fees for non-certified aircraft (the noisier ones) are subject to a 5% surcharge. This seems to be too easy an assessment basis. Furthermore, such a flat rate is very likely inefficient. Nevertheless, according to OECD experts, the proper assessment basis for noise charges is relatively easy to compute. They propose a simplified version of the Schultz formula.

The general formula for this assessment basis is:

\[ \sum_i f_i \cdot l_i \]

where \( f_i \) is the noise footprint of a specific source for a noise level class \( i \); and \( l_i \) is the impact indicator in \( f_i \) (percentage of highly annoyed people which varies between 0 and 100). The advantages of this basis are that it is related to the impact of noise pollution on people: noise annoyance rather than noise production, a concept already much closer related to damage; furthermore, it may be applied to all sources of noise and not just to airport noise. Finally, it is simple to calculate and to understand and it will be internationally acceptable.

As far as industrial waste disposal is concerned, the charge levied on the polluter differs according to the type of waste. These taxes are intended to cover the expenses of waste collection and treatment. They are thus in no way linked to waste damages.
The situation is somewhat different in the case of waste oils. In Italy, the sales tax on new oils is higher than that on recycled oils. A specific tax of DM 7.50 per 100 kg of new oil is collected by the government of the Federal Republic of Germany. But even the German system is not a proper pollution charge system in the strict sense because the tax is based neither on pollution nor on damage. It is merely intended to redistribute the cost of pollution control activities from the community at large to the users of oil.

In Sweden, a tax on junk cars has recently been introduced. It is levied on the producer (or importer) of the vehicle. However, little information is available on the damage caused by junk cars. It is therefore hard to come to any conclusions as to the proper assessment basis.

Defining a proper assessment basis will in practice always result in a compromise between information costs on the one hand, and the economic losses due to inaccurate measurement on the other. Almost any indirect basis will involve errors. However, it should be the aim of any regulatory authority to minimize the impact of such errors.

2. The charge rate and incentives

The second characteristic of an optimal pollution charge system is its ability to create the proper incentives to reduce pollution up to the proper extent. The charge rate should be high enough to make it profitable for the polluter to curtail pollution emissions. Practical experience shows that most of the existing charge systems do not create such incentives, but instead are of a redistributive nature. They are intended to redistribute among the various polluters the burden of financing pollution abatement. This is the case with most of the charge systems in the field of water pollution, although it should be stressed that an attempt is now being made to give charges an incentive effect by gradually increasing the rate as time goes by (France, the Netherlands and the Federal Republic of Germany). Noise charges, as they are contemplated in different countries, may perform better in this respect, mainly because they will be assessed on the proper basis, i.e. that of noise damage.

One could argue that a problem arises if the polluter is able to pass the entire tax burden on to the final consumer of its product without suffering any reduction in sales and thus without any loss of profits. There will then be no incentive created to reduce pollution emissions. An economist, however, will not be worried by this behaviour. He will argue that consumers thus prove that they are willing to pay the full price of the pollution damage by paying the higher price for the product. Of course, such reasoning does not take into account the distributive aspects of the problem. Those who pay for the damage are not necessarily those who suffer from it. It might, however, be considered socially unacceptable that the latter are not compensated for or relieved of the damage. This is the reason why a charge system should always be accompanied by emission standards in such circumstances.

There is one other characteristic of an optimal charge system, which, though it is often lacking in practice, has very serious consequences for efficiency. With
charges, the choice between either paying the charges and not abating, and paying less, or be exempted from charge payments, and abating, should be left open.

Many existing systems of charges do not create any incentive to abate because they do not give the polluter the opportunity to reduce the tax payments by abating more.

A good example of a charge system deficient in this respect is the Belgian scheme applied by the Water Purification Agency for the Coastal Area. The basis of charge assessments is a conversion coefficient for every type of industry. Each firm in that industry is thus supposed to have a particular polluting capacity indicated by its industry’s coefficient. The polluting capacity of each individual plant is then computed by adjusting the industry coefficient on the basis of the number of employees or on the basis of the production capacity of the individual plant. This type of regulation provides no incentive to pollute less. On the contrary, from an economic point of view it introduces totally wrong incentives because an individual plant can only reduce its tax payments by employing fewer people or by producing less.

The French system does not suffer from this drawback. It allows the individual firm to pay less if it can prove that it pollutes less. The costs of determining the actual pollution level will have to be borne by the polluter if he gave the wrong information and by the government if the polluter’s assessment was correct.

3. National versus regional charges
There remains one more question to be answered. Which administrative entity should levy the charges; in other words, should taxes be levied at the national or the regional level?

One may argue that uniform national taxes are preferable to regional ones because the former affect the competitive relationships between industries in the same country rather less than the latter do. For the same reason a uniform international policy is preferable to diverging national policies. One may refer to the Belgian water legislation to illustrate the problems involved in introducing regional incentives alone. The charge system was temporarily abolished in 1976 due to the fact that only industries in West and East Flanders had to pay charges. Similar factories in the other parts of Belgium were not yet required to pay any charges for the same type of pollution.

Nonetheless, some regional adjustment of the charge rate is needed because charges must, after all, be based on damage, and the damage may be a function of regional or local circumstances. Here again, one should try to strike a balance between efficient abatement and relatively undistorted competitiveness. Distortions of competitiveness very likely constitute only a short-term problem.

Indeed, during a transitional period industries will adjust to the new tax regulations, for example by altering production techniques and relocating certain activities. In the long run, the attempt to satisfy the conditions of an efficient abatement policy, i.e., with a charge rate linked to actual damages, should no longer involve a great distortion of normal competitive relationships.
It may be concluded that too many charge systems at present in use do not provide the proper incentives. The provision of such incentives is one of the attractive characteristics of charge systems in comparison to other pollution control schemes. However, some changes may be expected in the near future as more information on pollution damage becomes available, and as the transitional period for catching up with past neglect comes to an end.

II. Positive Incentives

Although strict adherence to the polluter-pays principle implies that only negative incentives in the form of pollution charges should be introduced, more and more government administrations are making use of positive incentives in the form of direct subsidies, special interest loans, accelerated depreciation allowances, tax credits and so on in order to help industry pay for abatement equipment.

Many economic studies have demonstrated the ineffectiveness of subsidy programmes as means of controlling the environment. An important reason for this is that if the subsidy is in the form of investment allowances or in the form of some other device to help cover some proportion of abatement costs, pollution abatement will not necessarily be stimulated. If the equipment adds to a firm's costs but not to its revenue, a government subsidy which absorbs part of the cost cannot turn abatement into a profitable activity for the firm.9

This argument is of course only valid if no pollution standards are issued, or if efficient control of violations of pollution regulations is lacking, something which might quite often occur. The only reasonable policy would therefore be the one where the subsidy is linked to the amount of pollution abated, but then, relatively speaking, much more information is required to operate a subsidy scheme than is the case with a system of charges. One must not only measure the actual level of pollution emissions and damage, but also the initial levels of emissions before the regulations were introduced. Gathering that information might be costly. Moreover, there will always be the risk that the polluter recognizes the effects of his action on the regulatory authority. Thus, a subsidy scheme may make it profitable for the firm to start off by polluting more than it would otherwise have done in order to qualify for larger subsidy payments.

A further drawback with subsidy programmes is the cost to the government and thus the additional financial burden on the taxpayer. If those expenses are financed out of general tax payments, there will be a distortive effect in addition to the welfare loss created by most types of taxes. To non-economists, this phenomenon can shortly be explained by making use of Figure 2. There, D and S represent respectively, ordinary demand and supply curves of a particular product. The price of the goods is indicated on the vertical axis and the quantity of the goods supplied and demanded on the horizontal axis.

Producing these goods and selling them on the market yields a particular amount of welfare which is represented in monetary terms by the surface OQR. The amount consumers are willing to pay for the quantity OT of the good is OQRT. The production costs for this quantity are represented by ORT. Consumers pay actually OPRT to the industry. Their net welfare is therefore PQR. Industry gains OPR as pure profits.
An indirect tax of UV per unit product will decrease sales by T'T. It is obvious from Figure 2 that the tax has lowered total welfare by an amount equal to WRX. The new level of net welfare for the consumer is VQW, and that of the producer OUX. The government gains UVWX as tax proceeds. But, the triangle WRX of welfare is clearly lost.

Figure 2 - The welfare loss caused by an indirect tax

If indirect taxes are raised to finance environmental subsidies, this so-called excess burden WRX will still increase. Even direct taxes are not free from welfare-distorting side-effects. It can thus be concluded that a charge system is far more desirable than a generalized system of pollution subsidies financed through taxes which has the said negative effects.

There is, however, an even more important reason why subsidies should generally be avoided. A subsidy may encourage entry into the industry and thus induce an expansion in competitive outputs and in pollution. Although a subsidy will then tend to cause a reduction of the firm's emissions, it is likely to increase the emissions of the industry as a whole even beyond what they would be in the absence of fiscal incentives.

It may be concluded that from the point of view of efficiency, it seems hard at first sight to find any justifiable reason for using subsidies as a substitute for taxes and direct controls.

However, the arguments against government assistance generally have never been found convincing by most government institutions inasmuch as subsidy programmes have, until recently, been the instruments most frequently used in most countries to promote industrial pollution abatement.

Table 2 gives a summary of the financial amounts involved in different assistance schemes in different OECD countries for various years.
Table 3 presents an international comparison of the total amount of financial assistance provided in 1973, 1974 and 1975. The total amount of assistance is expressed as a percentage both of the total industrial environmental investment and of the Gross Domestic Product (GDP). To give an idea of the intensity of environmental policies in those countries, total environmental investment is also expressed as a percentage of GDP.

From this information it may be concluded that significant sums of government money are being indirectly invested in industrial environmental programmes.

Why then are subsidies so frequently used? The most important reason, it is argued, is the concern about the effects of the use of "stronger" pollution control measures on employment and economic growth, and on the relative competitiveness of particular industries.

It may indeed be concluded from the first part of this paper that the burdens of an environmental policy should be distributed among different industries according to the environmental damage they cause. This means that some industries will suffer more than others. If those which pollute the most happen to be the ones which are already in an inferior competitive position in the economy, then strict regulations combined with pollution charges will hardly be acceptable to those industries; some kind of government help will in such cases be unavoidable.
### TABLE 21

Financial assistance in Base Year Cash Values

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#### Notes:
- **Favourable Interest Loans** (a)
- **Guaranteed Accelerated Depreciation** (a)
- **Tax Deductible Funds** (a)
- **Reduction in Indirect Taxes** (a)
- **Direct Subsidies** (a)
- **Indirect Subsidies** (a)
- **Self Financing Subsidies** (a)
- **Total** (a)

### Additional Notes:
- (a) very small zero
- (b) 0.95
- (c) 0.95
- (d) 1.9
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(a) Information was provided but was insufficient for the calculation of cash values.
(b) Some, but probably not significant amounts, are missing from the calculation.
(c) No information or only partial information is available for 1976.
(d) Totals only calculated when data is available for all the corresponding schemes for the particular year.
(*) Indicates Secretariat estimate of basic data.
(e) Funds are financed out of pollution charges.
(f) Because of the complexities of the Japanese loan market, there could be a substantial margin of error in these calculations, arising out of possible differences between real interest rates on borrowings and the subsidised rates.
### Table 3 (a)

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If subsidies are desired on these grounds the following conditions should always be taken into account. Government assistance should be of a temporary nature. It should be restricted to a transitional period of adjustment until such time as the new environmental standards are enforced. One should mention here that most of the subsidy programmes that exist in different countries indicate the length of the assistance period or provide for the possibility of an annual or periodic review of the measures taken. As long as aid is only granted on a temporary basis, mainly to allow industry to catch up with past neglect of the environment, it will not have the detrimental consequences which were mentioned earlier.

Government assistance should be conditioned by the relative efforts made by an industry to reduce its pollution emissions. This condition is crucial from the point of view of efficiency. If it is not satisfied, there is no guarantee that the least expensive abatement techniques will be used or developed. On this basis, almost every existing aid programme is in a certain sense deficient. Accelerated depreciation allowances stimulate capital intensive abatement measures as compared to other ways to reduce pollution damages (for instance changes in the production process and products alterations). This disadvantage of special depreciation allowances exists with all forms of aid which provide a total or partial financing of a particular type of abatement equipment. For this reason it may be argued that if assistance is provided at all, it should be, in the language of economists, as "lump sum" as possible. This means that it should not be based on the introduction of any particular investment or technique, but on the simple criterion of damage reduction.

Accelerated depreciation allowances suffer from the further disadvantage that they are primarily an advantage to plants which are making a profit. Accelerated depreciation implies a smaller accounting profit and thus less profit taxation. Those plants which are hardly making any profit, i.e. the marginal plants, will not be helped by this assistance scheme, despite the fact that it is largely these plants and industries which are in need of government help. At this point it
should be mentioned that some countries have even introduced a minimum investment limit to be eligible for subsidies. Under the Belgian water legislation, only industries which planned a minimum investment of 200,000 BF could apply for subsidies. A regulation of this nature directly conflicts with the final aim of an efficient environmental policy and should therefore be avoided.

III. Conclusion

In this article, a theoretical review has been given of the advantages and disadvantages of government financial intervention in the environmental field. The conclusion to be drawn is that a system of pollution charges is by far superior to a subsidy scheme. Most of the existing charge systems, however, lack the proper assessment basis and the incentives to promote the proper degree of pollution abatement.
Footnotes

1 The terms charges, taxes and levies are used interchangeably in this article.
3 See Kneese and Schultz, Pollution Prices and Public Policy (Washington, 1975), pp. 19-21 and 78.
4 This table is an elaborated version of Table I, "Procedure for Implementing Charges: What has been done?", in: Pollution Charges. An Assessment (OECD, 1976), p. 67.
5 This and the following information on the practical experience with charge systems is based on Pollution Charges. An Assessment, op. cit., n. 4, see our table 1.
7 Loc. cit., n. 6, 6, for detailed information on this assessment basis.
Le contrôle d'activités préjudiciables à l'environnement par des régimes d'autorisation préalable, ou de déclaration

Alexandre Charles Kiss

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   A. Caractéristiques générales
   B. Les activités soumises à autorisation ou déclaration
   C. Organes compétents pour délivrer l'autorisation ou recevoir la déclaration
   D. L'examen du projet
      1. L'enquête préalable
      2. La décision
      3. Une procédure parallèle ou complémentaire: la concertation
   E. Recours
   F. Surveillance de l'application de la décision
   G. Sanctions

II. Les régimes d'autorisation en droit international et dans le droit des Communautés européennes

Il est généralement reconnu que la meilleure façon de protéger l'environnement est de prévenir sa détérioration. Ce principe est sous-jacent dans de nombreux textes juridiques aussi bien nationaux qu'internationaux. Il a été énoncé avec une particulière netteté dans les deux programmes d'action successifs des Communautés européennes en matière d'environnement, adoptés respectivement en 1973 et en 1977: "La meilleure politique de l'environnement consiste à éviter, dès l'origine, la création de pollutions ou de nuisances plutôt que de combattre ultérieurement leurs effets ....".

En droit, le principal instrument de la prévention est la réglementation. Celle-ci peut avoir recours à des solutions générales: fixation de normes de qualité du...
milieu (eau, air), de normes d’émission, de production ou de produit. Elle peut aussi consister à soumettre tous les cas où des activités définies sont considérées comme pouvant être préjudiciables à l’environnement à un examen préalable par l’autorité publique compte tenu éventuellement de normes fixées au préalable par voie réglementaire. Cette dernière méthode qui fera l’objet de la présente étude, a l’avantage certain d’être souple, de pouvoir s’adapter aux circonstances précises de cas concrets. Elle peut aussi être complétée en y intégrant des procédures particulièrement efficaces telles que la préparation de rapports écologiques, des enquêtes publiques ou administratives, l’adoption de prescriptions spécifiques imposées au promoteur du projet, la surveillance ultérieure des activités examinées, etc. … Par ailleurs, à leur tour les régimes d’autorisation ou de déclaration applicables à certaines activités s’intègrent nécessairement dans des procédures plus larges visant à assurer un aménagement rationnel du territoire.

L’examen préalable de certaines activités projetées peut comporter deux actes qui se correspondent: l’acteur du projet soumet à l’autorité compétente ses plans et les éléments nécessaires pour les évaluer au point de vue des conséquences que leur réalisation semble comporter sur l’environnement et l’autorité y répond par une décision accordant ou refusant l’autorisation (régimes d’autorisation). Il peut ne pas comprendre cette deuxième phrase et consister seulement en un acte unilatéral de la part de l’intéressé qui porte à la connaissance de l’autorité compétente son projet (régime de déclaration ou de notification). Dans les deux cas l’essentiel est la possibilité que se réserve l’autorité publique de connaître les projets pouvant être préjudiciables à l’environnement. Juridiquement les deux régimes sont différents: dans le cas de l’autorisation préalable il s’agit d’une décision de la puissance publique qui intervient toujours, nécessairement, alors que lorsqu’il s’agit de déclaration il n’y a pas de décision, ou du moins pas obligatoirement: tout au plus la puissance publique peut-elle interdire l’activité déclarée dans des cas prévus par la législation. Il en est ainsi, dans certains pays, lorsqu’il s’agit du contrôle de substances chimiques. L’effet des deux procédures peut être le même en pratique, malgré la différence de leurs natures juridiques. En outre, la surveillance ultérieure des activités autorisées ou déclarées peut s’exercer de la même manière.

Les régimes d’autorisation préalable existent aussi bien dans les droits internes des différents pays que sur le plan international. Puisque la notion même de puissance publique, qui est capitale dans cette procédure, est très différente lorsqu’il s’agit de droit interne ou de droit international, il sera nécessaire d’envisager les deux aspects séparément, étant entendu que le second présente à l’heure actuelle une image bien moins développée que la première, voire fragmentaire.

I. Les régimes d’autorisation et de déclaration en droit interne

A. Caractéristiques générales

Dans certains pays, les régimes d’autorisation ou de déclaration sont fort anciens: en Belgique, en France et aux Pays-Bas ils remontent au début du XIXe siècle, mais on peut dire que dans la plupart des États européens on trouve de tels régimes instaurés avant 1900. Dans ces conditions, il n’est pas étonnant que
leurs objectifs mêmes aient subi des modifications profondes. Alors qu'au départ le but recherché était d'éviter ou de diminuer les dommages et les nuisances pouvant être causés au voisinage - avant tout dans une perspective de protection de la propriété privée - cette finalité s'effaçait progressivement au profit d'une conception visant de plus en plus à des intérêts plus globaux: la santé publique, la sécurité publique et, depuis un temps relativement récent, la protection de l'environnement en tant que bien de la collectivité tout entière5.

En règle générale, c'est en tenant compte de ces objectifs que l'examen préalable des projets doit être fait. Au cours de l'évolution la préoccupation était constante de trouver un compromis entre intérêts économiques d'un côté, d'autres intérêts de l'autre - d'abord ceux du voisinage, ensuite ceux de la collectivité. C'est peut-être précisément ce compromis entre intérêts souvent opposés qui constitue la principale caractéristique des régimes d'autorisation et de déclaration.

Bien entendu, les intérêts économiques aussi bien que ceux de la collectivité ne sont pas immuables: ils varient au rythme de l'évolution de l'économie, mais aussi des sciences et de la technique. Aussi les régimes d'autorisation doivent-ils avoir une certaine souplesse pour pouvoir s'adapter aux changements dans le temps. L'image que nous avons de l'hygiène publique, de la santé, de l'environnement se modifie constamment au fur et à mesure que se développent nos connaissances dans ces domaines.

Dans l'ensemble, les régimes d'autorisation et de déclaration se caractérisent par une assez grande complexité, c'est peut-être leur principal défaut. Il n'y a pratiquement pas de pays où il n'existerait qu'un régime unique résultant d'un texte législatif (loi, décret, ordonnance, etc.) unique: la multiplicité des régimes est extrêmement fréquente. Sans doute peut-on voir là un des tributs de l'utilité même du système: le contrôle préalable que l'autorisation ou la déclaration permettent d'exercer est un moyen pouvant être employé au service de divers buts parmi lesquels la protection de l'environnement peut être l'objectif principal mais où elle peut aussi ne figurer que comme considération complémentaire. Ainsi, à côté des régimes d'autorisation instaurés pour sauvegarder l'environnement, on trouve dans la plupart des pays d'autres régimes plus ou moins analogues, créés dans d'autres buts (permis de construire, procédure d'expropriation, procédures d'aménagement du territoire) mais dont les procédures permettent de faire valoir le point de vue de la sécurité, de la santé publique, de la police générale, etc. ... Ainsi, en envisageant les régimes d'autorisation ou de déclaration instituées explicitement au service de la protection de l'environnement, on ne saurait oublier l'existence de procédures parallèles dont les répercussions sur la réalisation de cet objectif peuvent être considérables.

Toutefois, même si l'on tente d'isoler, afin de mieux les décrire, les régimes d'autorisation institués uniquement en vue de la protection de l'environnement,
on n'échappe pas à toute difficulté. Dans certains pays il existe une loi générale pour la protection de l'environnement prévoyant un régime d'autorisation pour certaines catégories d'établissement (Danemark, France, Luxembourg, Pays-Bas, République fédérale d'Allemagne, Suède, etc. ...). Dans d'autres, des lois particulières peuvent prévoir des régimes d'autorisation (Irlande, Italie, Royaume-Uni, États-Unis). Cependant, dans tous les cas il existe aussi des textes législatifs concernant seulement certains aspects de la protection de l'environnement comme des lois concernant un secteur déterminé de l'environnement (air, eaux de surface, eaux souterraines, eaux marines, etc. ...) ou bien les lois relatives à certaines sortes de pollution ou de nuisance ou à des agents polluants déterminés (déchets, bruit, substances chimiques, substances radioactives, etc. ...). Dans l'ensemble, le plus souvent il s'agit moins d'un régime déterminé que d'une multiplicité de sous-systèmes liés entre eux par une même finalité et caractérisés par l'objectif particulier directement poursuivi. Les raisons en sont souvent historiques: le législateur agissait d'une façon empirique pour parer au plus pressé en essayant de remédier à des problèmes concrets. Elles peuvent aussi être administratives: de nombreux départements ministériels et organismes régionaux ou locaux peuvent être appelés à intervenir lorsqu'il s'agit d'examiner des projets pouvant mettre en danger l'environnement. Enfin, il convient de dire nettement que la nature même de l'environnement est complexe: cette notion, difficile à définir, comprend de nombreux éléments et touche à presque tous les grands secteurs de l'action des autorités publiques.

Dans les pays où il existe une législation établissant un régime central d'autorisation, il est souvent prévu que les différentes procédures d'autorisation ou de déclaration sont confondues en une seule (France, République fédérale d'Allemagne). Cette expérience permet d'affirmer qu'il est souhaitable que dans les autres pays les différents systèmes d'autorisation soient repris dans un régime global, autour d'une procédure centrale comme celle du rapport d'impact écologique.

B. Les activités soumises à autorisation ou déclaration

Une des questions fondamentales qui se posent au sujet des régimes d'autorisation ou de déclaration est de savoir quelles seront les activités soumises à autorisation ou à déclaration. Globalement on peut estimer que ces régimes sont basés pour l'essentiel sur les conséquences escomptées que certaines activités pourraient produire sur l'environnement.

En règle générale, le législateur compte les activités dans le cadre des installations où elles se déroulent: l'autorisation ou la déclaration concerne l'établissement qui sert de lieu à des activités déterminées pouvant être préjudiciables à l'environnement. Certaines législations précisent qu'au cas où ils sont concernés, les établissements doivent être interprétés dans un sens très large comprenant toutes les activités pouvant causer des dommages ou des nuisances sérieux à l'environnement 6.

Ce dernier est considéré par la plupart des législations comme commençant à l'extérieur des limites de l'établissement visé: les régimes d'autorisation concernant l'environnement ne visent généralement pas ce qui se déroule à l'inté-
rier des établissements. Ceci n'exclut pas, bien entendu, l'existence d'autres régimes prévus pour la sécurité, la salubrité, l'hygiène, etc. ... à l'intérieur des établissements.

Une interprétation large a été donnée au terme "établissement" aussi dans un autre sens. Le régime d'autorisation ou de déclaration peut s'appliquer même lorsque seulement une partie des installations faisant partie de l'établissement recèle des dangers pour l'environnement.

Le devoir de solliciter une autorisation ou de faire une déclaration peut également être interprété de diverses manières: il peut être considéré comme concernant seulement l'exploitation de l'établissement ou déjà son existence pure et simple. Dans la pratique, c'est une vue globale qui semble prévaloir, d'où la tendance générale de solliciter l'autorisation ou faire la déclaration à un stade relativement précoce de l'élaboration des projets.

Il semble qu'au cours de l'évolution le champ d'application des régimes d'autorisation et de déclaration s'est aussi étendu en ce qui concerne les activités visées. Ainsi on peut constater une tendance générale à englober les installations mobiles, à ne pas faire de distinction entre activités lucratives et non lucratives et à soumettre les activités d'organismes publics au même régime que les activités privées, à l'exception, le plus souvent, des installations militaires.

L'autorisation est aussi nécessaire, même si elle est soumise à des formes allégées, pour des activités temporaires. Elle est généralement exigible non seulement pour la création de nouveaux établissements ou installations, mais aussi pour les modifications qu'ils subissent, à partir du moment où ces modifications revêtent certaines dimensions, et notamment si elles sont susceptibles de causer des pollutions plus importantes.

Un des problèmes majeurs des régimes d'autorisation et de déclaration est de savoir s'ils doivent s'appliquer à des établissements qui existent déjà au moment où un tel régime est introduit dans la législation. La règle générale est que les lois instaurant des systèmes d'autorisation ne s'appliquent qu'à partir du moment où elles entrent en vigueur. En pratique ces lois ne devraient donc concerner que les établissements ultérieurement créés, laissant ainsi en dehors de la réglementation applicable les établissements qui peuvent être précisément les plus polluants parce que les plus anciens, et même créant une situation de faveur au profit de ces derniers. Certaines lois ont avancé que le principe de non-rétroactivité des lois existe surtout en matière pénale, mais la plupart des législations n'en respectent pas moins le "droit d'antériorité" dont bénéficient les établissements existants. Tout au plus essaye-t-on de limiter, autant que possible, ce droit, en leur imposant des prescriptions spécifiques, et en exigeant une autorisation pour toute modification plus importante ainsi qu'après l'interruption des activités pendant un certain temps.

En ce qui concerne la définition des types d'activités auxquels doit s'appliquer un régime d'autorisation ou de déclaration donné, les systèmes les plus caractéristiques utilisent la méthode de la nomenclature, c'est-à-dire l'énumération des activités considérées comme pouvant produire des effets défavorables sur l'environnement et devant être assujetties de ce fait à un examen préalable. Les listes
auxquelles sont inscrites ces activités peuvent faire partie de la loi elle-même qui institue, généralement sous forme d'annexe, le régime d'autorisation. Elles peuvent aussi faire l'objet d'un instrument législatif complémentaire: décret ou règlement d'application. Cette dernière solution a l'avantage de rendre plus facile les mises à jour. En effet, celles-ci peuvent devenir nécessaires assez fréquemment; en France le décret du 24 décembre 1919 qui définissait les établissements assujettis à un régime d'autorisation ou de déclaration par la loi de 1917 a été modifié cinq fois avant d'être entièrement refondu en 1953; ce dernier texte a subi onze modifications entre 1958 et 1976, date de l'entrée en vigueur d'une nouvelle loi.

La nomenclature peut faire une distinction entre plusieurs sortes d'établissements: une catégorie donnée peut être soumise à l'obligation d'obtenir une autorisation préalable alors que les établissements relevant d'une autre ne sont assujettis qu'à une déclaration.

L'inscription d'une activité dans la nomenclature entraîne sa soumission au régime institué par la loi. Aussi parle-t-on de "classement" et "d'établissements classés". Dans certains systèmes il ne suffit pas que l'exploitation d'un établissement soit effectivement néfaste pour l'environnement pour que le régime devienne applicable; l'inscription dans la nomenclature est une condition formelle à laquelle il doit être satisfait. En contrepartie, le fait d'être inscrit dans la nomenclature suffit pour que le régime institué par la loi s'applique, même si l'établissement en cause ne provoque pas en réalité de dégâts à l'environnement. Bien entendu, le fait de subordonner l'application des régimes d'autorisation ou de déclaration à des conditions aussi formelles ne signifie pas que les activités qui ne figurent pas dans la nomenclature échappent à tout contrôle, dans certains cas même des procédures spéciales plus astreignantes peuvent leur être applicables (activités nucléaires, pétrolières, etc.).

C. Organes compétents pour délivrer l'autorisation ou recevoir la déclaration

Il est bien évident que la question de savoir quel sera l'organe compétent pour accorder l'autorisation à des établissements "classés" ou pour recevoir la déclaration trouvera sa réponse dans chaque pays selon les conceptions juridiques et selon les structures administratives voire constitutionnelles nationales. Le degré de centralisation ou de décentralisation, variable d'un pays à l'autre, joue, bien évidemment, un rôle majeur, mais on ne saurait oublier la place qui peut être réservée à des organes "déconcentrés", c'est-à-dire directement subordonnés à l'autorité centrale mais localisés dans des chefs-lieux de départements, de provinces, de régions, etc. ... On peut relever certaines tendances à réserver les affaires présentant une importance majeure aux organes les plus élevés. Par ailleurs généralement lorsque des établissements soumis à autorisation ou à déclaration concernant plusieurs communes ou plusieurs régions, c'est l'organe supérieur qui statue. Dans certains systèmes les directives générales pouvant être formulées par un organe central à l'intention des autorités qui prennent les décisions en matière d'autorisation jouent un important rôle. En règle générale, aussi, les autorités administratives ne sont pas compétentes pour autoriser des activités qu'elles veulent entreprendre elles-mêmes: dans ces cas l'autorisation est donnée par l'organe supérieur.
La création d'organes spéciaux au sein de différents gouvernements nationaux (ministères, agences, etc.) de l'environnement a posé la question de savoir si toutes les compétences qui découlent de l'existence de régimes d'authorisation ou de déclaration ne doivent pas leur être confiées au lieu d'être dispersées parmi différents départements ministériels. Il est certain que cette solution est souhaitable, mais il n'est pas moins évident que sa réalisation peut se heurter à des difficultés administratives, voire politiques.

D. L'examen du projet

L'examen du projet par les autorités publiques compétentes a une importance immédiate surtout lorsque cet examen doit aboutir à une décision. C'est le cas des régimes où certaines activités sont soumises à autorisation; la procédure de déclaration peut avoir un rôle dans la surveillance du déroulement des activités.

A l'intérieur de la procédure de décision une distinction peut être faite entre l'enquête préalable et la prise de la décision elle-même.

1. L'enquête préalable

On peut affirmer que la façon dont l'enquête qui doit précéder la décision est organisée et menée a une importance capitale sur l'efficacité réelle d'un régime d'authorisation donné. L'objectif, la protection de l'environnement, a le plus de chances d'être atteint si tous les renseignements essentiels pour pouvoir juger le projet d'établissement sont disponibles et si tous les intéressés - citoyens aussi bien que services administratifs - sont à même de donner leur opinion et, le cas échéant, de formuler des observations.

C'est ainsi que l'auteur de la demande d'authorisation doit être obligé de communiquer toutes les informations permettant de prendre une décision en connaissance de cause, même lorsqu'il s'agit de renseignements dont il ne dispose pas encore mais qu'il doit recueillir lui-même (par exemple concernant les incidences de la réalisation de son projet sur l'environnement). On peut citer à titre d'exemple la procédure allemande qui exige que les indications fournies par le requérant permettent de faire ressortir les éléments suivants:

- les installations techniques, principales et secondaires, dont la construction est prévue;
- le procédé de fabrication prévu avec des données précises, ainsi que des indications sur la nature et la quantité des substances utilisées, des produits et des résidus;
- la nature et la quantité des émissions que risque de produire l'installation, la nature, l'emplacement et les caractéristiques précises des sources d'émission, la répartition des émissions dans l'espace et dans le temps;
- les mesures prévues pour protéger l'environnement des effets nuisibles, en particulier les mesures pour limiter les émissions et les immissions;
- les mesures prévues pour protéger la collectivité et le voisinage des dangers et inconvénients pouvant atteindre certaines proportions;
- les mesures prévues pour l'utilisation des résidus ou la destruction des déchets;

- les mesures prévues en matière de sécurité du travail.

On doit ajouter que, en plus de ces éléments dont l'énumération n'est pas exhaustive, la loi fédérale allemande impose au requérant le devoir de remettre à l'administration compétente une brève description générale de l'installation et de ses incidences probables sur la collectivité et le voisinage, et ceci afin de faciliter l'information du public. Dans la mesure où certains documents contiennent des secrets industriels, ils doivent être présentés à part. Toutefois, leur contenu doit être résumé de façon assez détaillée sans pour autant violer des secrets, afin de permettre aux tiers de juger si et dans quelle mesure ils seront affectés par les incidences de l'installation.

Il est bien évident que si la procédure de rapport écologique est adoptée par un pays, les renseignements à fournir par le requérant doivent en tenir compte. En particulier, il est plausible de penser que le requérant devrait aussi ajouter aux renseignements ci-dessus une analyse de l'état initial du site de l'établissement et de son environnement, une analyse des effets sur l'environnement des activités projetées et éventuellement des solutions de remplacement à celles proposées en premier lieu.

Dans tous les cas, le devoir de communiquer des informations comprend celui de répondre à toute question complémentaire et d'apporter tout élément supplémentaire exigé en cours de procédure par les autorités.

En possession de ces éléments, les autorités compétentes doivent, dans un certain nombre de pays, consulter le public sur les avantages et les inconvénients que peuvent présenter les établissements projetés. Cette consultation suppose que les intéressés aient pu prendre connaissance de la demande d'autorisation et des documents joints ou du résumé qui les remplace, dans des conditions adéquates.

Parmi ces conditions figure en bonne place la nécessité d'une publicité suffisamment large donnée à l'enquête. En particulier, les moyens par lesquels la publicité sera faite ont une très grande importance. L'affichage est le moyen le plus traditionnel; il devrait être fait non seulement dans des bâtiments administratifs et aux lieux habituellement réservés aux avis officiels, mais aussi au site choisi pour l'exploitation projetée ainsi que dans un rayon correspondant à l'étendue du danger prévisible de pollution. Souvent la publication dans la presse est également prévue: en dehors de journaux officiels, certains pays font procéder à la publication d'avis concernant les demandes d'autorisation dans la presse en général, de préférence dans les journaux locaux. En Belgique une notification individuelle est adressée aux intéressés, c'est-à-dire aux propriétaires et aux principaux occupants des immeubles pouvant être affectés par les pollutions et nuisances.

Une autre condition essentielle d'une consultation efficace du public est une durée suffisante de l'enquête. Celle-ci doit être non seulement suffisamment longue; en fixant sa date il convient aussi de tenir compte de la période de l'année et d'éviter de choisir les saisons où les intéressés risquent d'être absents.
Pendant la durée de l'enquête publique les personnes intéressées doivent pouvoir consulter le dossier non seulement pendant des heures de bureau, mais plusieurs fois aussi en dehors de ces heures afin que personne ne soit empêché par ses activités professionnelles de participer à la consultation.

Le lieu de l'enquête doit être choisi dans la localité où doit être situé l'établissement polluant ou, au cas où il s'étend sur le territoire de plusieurs communes, celle dans laquelle doivent se dérouler ses principales activités.

Pour pouvoir émettre un avis éclairé, les tiers intéressés doivent pouvoir prendre connaissance des éléments essentiels du dossier déposé par le requérant soit en le consultant dans son intégralité soit, lorsque des secrets industriels sont en jeu, en ayant à leur disposition un résumé fidèle du dossier.

En ce qui concerne la question de savoir qui peut participer à la consultation du public, le principe général est que toute personne intéressée doit pouvoir ex-primer son opinion. Aussi est-il malaisé de définir dans l'abstrait quels sont ceux qui doivent ou peuvent être consultés. En réalité, c'est la participation de groupements ayant pour objet de défendre des intérêts déterminés - et surtout des intérêts non matériels - qui pose le plus souvent des problèmes à cet égard. Il est souhaitable, en particulier, que ceux qui se donnent comme mission la protection de l'environnement puissent se faire entendre, mais les conditions de leur participation à l'enquête publique peuvent être réglementées selon des critères tels qu'une certaine ancienneté, leur présence dans la région pouvant être affectée par les activités envisagées, leur représentativité, etc. ...

Les observations des personnes participant à l'enquête publique peuvent être faites par écrit et, dans certains pays, dans le cadre d'une procédure orale.

Pour les observations écrites il est généralement exigé qu'elles portent le nom et l'adresse de leur auteur. Si l'on ne peut guère déterminer dans l'abstrait ce que doivent pouvoir comporter de telles observations, on peut citer l'exemple de la pratique néerlandaise selon laquelle on admet comme valables des objections portant sur des dangers, pollutions et nuisances concrets qui sont à craindre: risque d'incendie, nuisances acoustiques, danger d'explosion, émanations de mauvaises odeurs ou de poussières, étincelles, vibrations, troubles causés à la réception de radio ou de télévision, invasion de parasites (rats ou mouches), fumée, danger de corrosion, etc. ... Par contre, ne sont pas admises en vertu de la loi néerlandaise sur les nuisances les objections alléguant une vue détériorée, l'atteinte à la beauté d'un paysage, la défiguration de l'environnement, l'incompatibilité avec l'architecture environnante ou avec le site naturel, l'intensification de la circulation, la perte de valeur des immeubles avoisinants, etc. ... Les observations écrites doivent être jointes au dossier et communiquées au requérant ainsi qu'aux services administratifs consultés. Elles doivent aussi être à la disposition du public.

Dans un certain nombre de pays et, en particulier, aux États-Unis, la procédure d'observations écrites est complétée par une procédure orale: des audiences publiques (hearings) sont organisées avec la participation du requérant. Peuvent également y assister ceux qui sont intéressés par les conséquences de la réalisation du projet. Elles sont présidées par une personne désignée à cet effet par
l'administration. L'audience peut être entièrement publique, n'importe qui pouvant y participer; toutefois dans certains cas son accès est réservé à ceux qui ont formulé des observations écrites. Le but de l'audience est de permettre la confrontation des différentes vues: les objections formulées à l'encontre du projet doivent être discutées.

En règle générale un procès-verbal est dressé concernant le déroulement de l'audience dont des copies doivent être adressées au requérant, aux autorités intéressées ainsi que, sur leur demande, à tous les autres participants.

Il est bien évident que la consultation du public doit être complétée par celle des services administratifs pouvant exercer des compétences dans les domaines touchés par le projet. Certains textes législatifs désignent les autorités qui doivent être obligatoirement consultées, dans d'autres cas des organes peuvent donner spontanément leur avis. Toutefois, le plus souvent c'est l'organe compétent pour prendre une décision au sujet de la demande d'autorisation qui décide librement quels sont les organismes et services qui doivent être consultés. Le système idéal est de désigner certains organismes devant être obligatoirement consultés et de laisser à l'organe délivrant l'autorisation la faculté d'en consulter d'autres selon les besoins. Dans tous les cas les organismes participant à l'enquête doivent pouvoir donner leur avis par écrit; ils doivent aussi être à même d'assister à l'éventuelle audience publique.

Dans plusieurs pays il est expressément prévu que l'autorité publique peut solliciter l'avis d'experts - en fait il s'agit souvent d'instituts scientifiques ou d'institutions ayant les compétences techniques nécessaires pour effectuer les examens techniques.

A la fin de la procédure de consultation la clôture de l'enquête est prononcée. Si l'enquête a été dirigée par une personne spécialement désignée à cet effet - appelée "commissaire enquêteur" en Belgique et en France, "Presiding Officer" aux Etats-Unis - cette dernière transmet le dossier et les observations recueillies à l'autorité qui doit prendre la décision en y joignant son propre avis motivé.

2. La décision

Après la fin de l'enquête préalable - parfois marquée par un acte formel, la clôture de l'enquête - l'autorité compétente prend une décision au sujet du projet qui lui a été présenté ensemble avec les informations complémentaires que le requérant a pu être amené à fournir, les observations exprimées par le public, les avis d'autres services administratifs, éventuellement celui d'experts et, s'il y a lieu, l'opinion du commissaire enquêteur. L'ensemble de ces éléments doit être pris en considération, mais aucun n'engage l'autorité chargée de décider. Celle-ci apprécie souverainement les avis exprimés et peut, en dehors de tous les renseignements reçus, rechercher encore elle-même des informations supplémentaires soit dans ses propres archives, soit par des enquêtes ou des estimations ou même en s'adressant encore à des organismes scientifiques ou techniques.

Il n'en reste pas moins qu'en règle générale l'appréciation de l'autorité de décision prend en compte certains critères. Des normes de pollution ou de nuisances qui ne doivent pas être dépassées peuvent avoir été fixées par voie
Dans d'autres cas la législation peut fournir des valeurs indicatives d'immissions ou indiquer des méthodes pour calculer les incidences nuisibles à l'environnement. La pratique d'un certain nombre d'Etats montre que les éléments le plus souvent pris en considération sont:

- l'exigence que la réalisation du projet n'ait pour conséquence qu'un minimum de pollutions et de nuisances;
- la conformité de l'établissement aux exigences de la sécurité et de la salubrité;
- les méthodes de production prévues ainsi que les moyens envisagées pour lutter contre les pollutions;
- l'état général de l'environnement où doit se situer l'établissement, compte tenu de son éventuelle extension et du développement global ultérieur;
- l'utilité que présente au point de vue de la communauté locale et nationale l'établissement projeté.

Par contre, cette même pratique écarte la prise en compte de considérations telles que les inconvénients et les incommodités sans trop de gravité, la dépréciation de la valeur vénale des immeubles du voisinage, les conséquences qu'exerce la création de l'installation au point de vue de l'urbanisme, du tourisme ou de l'esthétique ainsi que des considérations économiques.

En règle générale, la décision doit intervenir dans un délai pas trop long après la clôture de l'enquête. Parfois, le législateur fixe sa durée: ce délai est de trois mois en Belgique, six mois en République fédérale, etc. ...

La décision peut accorder l'autorisation purement et simplement. Elle peut aussi y ajouter des prescriptions ou des conditions qui doivent être observées par les requérants. En Angleterre, les décisions prises en vertu de l'Alkali Act de 1906 relatif aux industries de l'alcali déterminent les meilleurs moyens utilisables pour diminuer la pollution et les nuisances; elles précisent aussi les méthodes ou le degré de contrôles techniques qui doivent être mis en oeuvre. Dans d'autres pays des prescriptions dont est assortie l'autorisation peuvent fixer des normes quantitatives et qualitatives pour les émissions, préciser les moyens par lesquels les dangers, les dommages ou les nuisances doivent être combattus, chercher à assurer l'élimination des déchets, prévoir des mesures de contrôle en ce qui concerne la quantité et la concentration des substances polluantes émises dans l'environnement, établir un régime de communication de renseignements concernant les mesures effectuées, imposer des dispositions relatives aux moyens d'intervention en cas d'accident, etc. ... Par la suite, durant le fonctionnement de l'établissement les autorités peuvent être amenées à modifier ces prescriptions, d'autant plus qu'elles possèdent alors les données réelles en ce qui concerne les incidences de l'établissement sur l'environnement.

De même, des prescriptions spécifiques peuvent être imposées lorsque l'autorité publique reçoit, dans les cas prévus par la législation, une déclaration.
Dans certains pays (Belgique, République fédérale d'Allemagne) l'autorisation peut être partielle ne concernant qu'une partie de l'établissement, il s'agit alors le plus souvent d'installations importantes dont la construction dure longtemps. L'autorisation peut aussi être temporaire, en particulier lorsqu'on peut prévoir que la situation devra être réévaluée en quelque temps soit compte tenu des expériences faites entre-temps (Belgique - Pays-Bas), soit à cause d'une évolution technique prévisible (Danemark).

L'autorisation peut être refusée, en particulier, lorsqu'il est établi ou lorsqu'il y a une raison suffisante pour craindre qu'au cas où l'établissement est autorisé, des dangers, des dommages ou des nuisances se produisent sans que des prescriptions dont pourrait être assortie l'autorisation puissent les empêcher ou, en général, lorsque l'intérêt de la limitation des pollutions et des nuisances l'impose.

La pratique des différents États est divergente quant à la question de savoir si la décision prise au sujet d'une demande d'autorisation doit être motivée.

L'effet de l'autorisation est de conférer au destinataire le droit d'exercer une activité qui ne serait pas permise sans cette autorisation. Dans certains systèmes juridiques (République fédérale d'Allemagne, Luxembourg ...) il y a des cas où l'autorisation crée un droit de caractère réel ("Realkonzession") qui s'attache à la propriété de l'établissement et qui en cas de changement de propriétaire revient au nouveau propriétaire.

Une question qui pose de sérieux problèmes théoriques est celle de savoir si une autorisation accordée pour créer un établissement laisse intact le droit des tiers de réclamer une indemnisation pour des dommages qu'ils subissent par suite de pollutions ou de nuisances - pourtant autorisées - causées par cet établissement. La solution généralement retenue est que le fait d'être titulaire d'une autorisation n'accorde pas la liberté de violer la propriété de son voisin et ne doit pas exercer d'influence sur les rapports de droit entre le titulaire de l'autorisation et ses voisins en ce qui concerne les nuisances. Aussi les derniers gardent-ils intact le droit de poursuivre devant des tribunaux civils la réparation du préjudice que l'activité leur causerait.

La décision concernant une demande d'autorisation doit être notifiée, bien évidemment, au requérant. Quant à la publicité à lui donner, plusieurs systèmes ont effectivement cours dans les différents pays. La décision peut être notifiée individuellement à toutes les personnes ayant formulé des objections ou ayant assisté à l'audience (Pays-Bas, République fédérale). Toutefois, en Allemagne la notification individuelle peut être remplacée par une publication collective lorsque le nombre des notifications dépasse 300. La décision peut être insérée dans des publications officielles (Allemagne, France); elle peut être affichée (Belgique, France, Luxembourg); elle peut être consultée par le public dans les lieux désignés à cet effet (Danemark, Irlande, Pays-Bas). Bien entendu, plusieurs de ces systèmes peuvent être combinés.

Les services et organismes officiels qui ont été consultés ou qui peuvent porter un intérêt à la décision sont généralement informés par notification individuelle.
3. Une procédure parallèle ou complémentaire: la concertation.

Certains pays - comme l'Angleterre - connaissent des procédures moins formelles en matière d'autorisation d'établissements pouvant causer des pollutions ou des nuisances. Il s'agit essentiellement d'aboutir à une décision préparée en commun entre l'administration et la personne désireuse de créer un établissement, si bien que l'on peut employer le terme de concertation.

Le prototype de cette procédure a été élaboré en Angleterre dans le cadre de la loi de 1906 sur les industries de l'alcali. Un groupe comprenant des représentants de l'industrie qui emploie le procédé en question et des représentants de l'administration est constitué pour étudier en commun le projet de créer un établissement. Au besoin, une expérimentation directe est faite par l'industrie elle-même pour voir les incidences des activités prévues. L'objectif est d'arriver à un accord entre l'administration et l'industriel sur les meilleurs moyens utilisables ("best practicable means") permettant de réduire les pollutions et les nuisances. C'est sur la base de cet accord qu'une décision est prise par l'inspecteur d'alcali en chef. Les renseignements recueillis au cours de la procédure sont régulièrement rendus public, mais l'inspection de l'alcali informe aussi volontiers les membres de la profession concernée.

Des phases comportant une concertation peuvent aussi être insérées dans une procédure d'autorisation plus formelle. Ainsi, aux Pays-Bas les personnes sollicitant une autorisation sous la loi sur les nuisances obtiennent le plus souvent l'assistance des services techniques compétents pour formuler leur demande, si bien que les autorités qui devront prendre la décision ou qui sont à consulter sont déjà mis au courant et peuvent exercer leur influence sur la formulation même de la demande. Les dossiers sont mieux préparés de ce fait, il peut être tenu compte des exigences majeures de la protection de l’environnement et le public est consulté sur des problèmes plus réels.

A côté de ces avantages indiscutables, les différentes formes que la concertation entre pouvoirs publics et personnes désireuses de créer des établissements susceptibles de représenter des dangers pour l'environnement peut revêtir n'échappent pas à tout inconvénient. La procédure d'autorisation assortie d'une consultation effective du public permet de faire ressortir une opposition d'intérêts économiques et écologiques; il appartient à l'autorité publique de les arbitrer. Au cas où l'administration s'est déjà entendue avec l'entrepreneur en question, le danger existe que ses représentants ne soient tentés de défendre avant tout le compromis qu'ils ont élabord et qu'ils ne constituent ainsi un front commun avec l'entrepreneur contre le public, élément le plus faible des trois parties en présence. Par la suite aussi, une trop grande entente entre les industriels qui doivent subir surveillance et contrôle et les organes qui devront les exercer peut vider de leur contenu ces fonctions pourtant essentielles pour la sauvegarde de l'environnement.

E. Recours

Conformément aux exigences de l'ordre juridique démocratique il existe dans tous les pays connaissant les procédures d'autorisation des voies de recours contre les décisions pouvant être prises. Toutefois, les différences entre struc-
tures administratives et judiciaires sont trop grandes d’un pays à l’autre pour pouvoir en donner une image globale. On peut seulement relever que le recours peut généralement être formé contre la décision elle-même, et notamment contre une autorisation et les prescriptions qu’elle comporte. Bien entendu, il peut être formé à cause du non-respect de la procédure et, en particulier, lorsque les règles relatives à l’enquête n’ont pas été respectées.

Dans certains systèmes d’autorisation toute personne peut faire appel contre une décision prise à la suite d’une demande d’autorisation (France, Irlande). Dans d’autres cette facilité est réservée aux personnes “intéressées” (Belgique, Danemark, Pays-Bas) et, en particulier à celles qui ont été lésées par la décision (Angleterre, Italie, Luxembourg). En République fédérale une distinction est faite entre recours administratif informel pouvant émaner de toute personne et recours auprès des juridictions qui ne peuvent être formés que par les intéressés. Quant au droit des associations de protection de l’environnement de faire recours contre une décision rendue à la suite d’une demande d’autorisation, la pratique des différents pays connaissant des régimes d’autorisation est très divisée.

**F. Surveillance de l’application de la décision**

Les mesures de surveillance sur les “établissements classés” destinées à assurer le respect de la décision prise concernant la demande d’autorisation découlent généralement de la législation établissant les régimes d’autorisation ou de déclaration. Néanmoins, dans certains cas elles sont prévues par les prescriptions accompagnant l’autorisation.

La surveillance est normalement exercée par des autorités publiques désignées - et parfois créées, comme en Allemagne et en France - à cet effet, qui peuvent faire les analyses et mesures pouvant sembler utiles, qui peuvent demander des renseignements, exiger la production de pièces, procéder à des examens, et avoir accès à tous lieux. Néanmoins, plusieurs législations comportent des dispositions tendant à assurer les secrets d’entreprises.

Les autorités de contrôle peuvent souvent adresser des injonctions aux titulaires de l’autorisation en leur ordonnant les mesures indispensables à l’exécution des obligations imposées par la décision d’autorisation.

Des particuliers peuvent aussi exercer une surveillance sur la façon dont les établissements autorisés respectent leurs obligations. En particulier, les voisins et autres personnes intéressées ainsi qu’éventuellement les associations peuvent avoir la possibilité de dénoncer les pollutions et nuisances qui leur paraissent excessives.

**G. Sanctions**

En règle générale, les sanctions interviennent en cas de non-respect des termes de l’autorisation et des prescriptions dont elle est assortie. Le plus souvent elles sont d’ordre administratif: retrait de l’autorisation, fermeture de l’établissement, suspension de son fonctionnement, avertissement et, dans certains pays, amende, astreinte, voire exécution des mesures qui s’imposent par l’administration aux
frais du bénéficiaire de l’autorisation. Des sanctions pénales peuvent également être prises, principalement à l’encontre de ceux qui font fonctionner des établissements classés sans autorisation valable, ne respectent pas les termes de l’autorisation ou des prescriptions qui l’accompagnent malgré l’avertissement formulé par les autorités ou qui font obstacle à l’exercice de la surveillance par l’autorité compétente. Des peines d’amende sont le plus fréquemment prévues, mais un certain nombre de pays connaissent aussi des peines privatives de liberté (Angleterre, Danemark, France, Pays-Bas, République fédérale, etc. …)48.

II. Les régimes d’autorisation en droit international et dans le droit des Communautés européennes.

Dans les relations internationales et à l’intérieur des Communautés européennes il existe aussi des régimes d’autorisation. Malgré les différences considérables qui peuvent exister entre droit international et droit communautaire, ils présentent une analogie essentielle: pour être appliqués, ils nécessitent l’intervention d’organes étatiques.

Dans l’ensemble, la technique des régimes d’autorisation est appliquée en ce qui concerne le déversement de substances déterminées dans un milieu aquatique - mer ou eaux douces - ou qui concerne la chasse ou la destruction d’espèces de la faune et de la flore sauvages et dans le domaine du commerce international de certaines de ces espèces. En règle générale, les textes conventionnels internationaux ou les directives communautaires ne font qu’édicter des interdictions; celle-ci doivent être appliquées par des organes que les États parties ou membres désigneront à cet effet, étant entendu que des autorisations dérogeant à ces interdictions peuvent être données par ces mêmes organes ou par ceux auxquels les États intéressés voudront confier cette tâche.

Des régimes d’autorisation ainsi prévus par plusieurs conventions internationales relatives à la pollution des eaux suivent une technique spéciale: ils visent moins les activités - encore que l’on puisse faire une distinction entre opérations délibérées d’immersion de déchets (dumping) par des navires et aéronefs49 et déversements de toutes autres sortes - que les substances évacuées dans le milieu aquatique. Les textes internationaux et communautaires comportent généralement deux listes. Le déversement des substances inscrites sur une liste "noire" est soit totalement interdit50, soit soumis à une autorisation à ne délivrer que dans des conditions très strictes à l’intérieur des normes déterminées51. Celui de substances figurant sur la liste "grise" est soumis à autorisation52, éventuellement dans des conditions moins sévères. Dans certains cas, les textes internationaux prévoient des dispositions régissant la délivrance des autorisations53.

Des systèmes d’autorisation sont également prévus en matière de protection de la faune et de la flore sauvages. Ainsi, des dérogations peuvent être accordées dans des cas où la destruction ou la capture d’espèces déterminées de la faune sauvage est interdite54. Dans certaines situations les autorisations sont accordées dans le cadre de contingents déterminés soit par des accords internationaux, soit par des organes institués par des traités55. La Convention de Washington du 3 mars 1973 sur le commerce international des espèces sauvages de flore et de faune
menacées d'extinction est entièrement fondée sur un système d'autorisations à
déliver par les organes des États contractants dont les activités doivent être
surveillées par des autorités scientifique nationales.

Bien entendu, des organes internationaux devraient exercer une surveillance sur
l'application des dispositions conventionnelles établissant des régimes d'auto-
risation. L'état actuel des relations internationales est tel qu'un contrôle inter-
national direct et organisé peut difficilement s'exercer sur le comportement
d'authorités nationales. Le système de surveillance qui est peut-être le plus avancé
cet égard est le "reporting System". Il consiste dans la préparation périodique
de rapports par les États contractants à une convention internationale sur la
façon dont ils ont exécuté des obligations conventionnelles déterminées. Ces
rapports sont adressés à un organe international et, le cas échéant, discutés par
celui-ci. Malgré les apparences, de tels systèmes peuvent ne pas être dépourvus
d'efficacité, surtout si les rapports connaissent une diffusion suffisamment large
et s'ils sont discutés par des organes dont les travaux connaissent une certaine
publicité 56. Sur le plan international comme à l'intérieur des États le concours
et le contrôle permanent de l'opinion publique est une condition essentielle du
fonctionnement efficace des systèmes d'autorisation et de déclaration.
Notes


2 Les deux systèmes peuvent d'ailleurs coexister dans un même régime, ainsi dans les lois françaises (du 19 décembre 1917 et du 19 juillet 1976) sur les établissements classés comme insalubres, incommodes ou dangereux une distinction est faite entre installations pour lesquelles l'autorisation préalable est requise et d'autres qui sont assujetties à une simple déclaration.

3 Belgique: décret du 15 octobre 1810; France: décret du 15 octobre 1810; Pays-Bas: décret royal du 31 janvier 1824.

4 Voir, par exemple, pour le Luxembourg l'arrêté royal grand-ducal du 17 août 1872, pour le Royaume-Uni le premier "Alkali Act" de 1863, pour l'Allemagne la loi sur l'industrie (Gewerbeordnung) du 21 juin 1869, pour l'Italie la loi du 22 décembre 1888 sur la défense de l'hygiène et de la santé publique etc. ... Aux Etats-Unis, par contre, la législation (fédérale, mais surtout celle des États établissant des régimes d'autorisation) est d'origine relativement récente. Au niveau du droit fédéral, les "Clean Air Amendments" de 1970 requièrent que les États créent des régimes d'autorisation pour les installations nouvelles.

5 Ainsi la loi fédérale allemande sur la protection contre les immissions (Immissions schutzgesetz) entrée en vigueur le 1er avril 1974 est inspirée par les "développements récents des sciences et des techniques dans l'intérêt d'une protection globale de l'environnement": la loi française du 19 juillet 1976 se réfère explicitement à la nécessité de protéger la nature et l'environnement, etc. ...

6 V. le décret royal néerlandais du 31 décembre 1969 et aussi la loi néerlandaise sur les nuisances de 1952, art. 1er, al. 2.

7 La loi néerlandaise précitée et voir aussi la loi française du 19 juillet 1976 qui remplace le terme "établissement" utilisé par la loi antérieure du 19 décembre 1917 par le terme "installation". La législation belge énumère à titre d'exemple les "fabriques, usines, ateliers, magasins, dépôts, carrières à ciel ouvert, machines, appareils, etc. ..." (Règlement général pour la protection du travail, approuvé par arrêté du 11 février 1946, art. 1. al. 1).

8 Ainsi la loi fédérale allemande sur la protection contre les émissions d'ozone, danoise, néerlandaise, etc. ...

9 En particulier en Irlande et au Royaume-Uni souvent l'autorisation doit être sollicitée avant même l'élaboration de plans plus détaillés.

10 On peut invoquer à cet égard la pratique en Belgique, au Danemark, et aux Pays-Bas, ainsi que la nouvelle loi française de 1976.

11 On peut également rappeler, pour les États-Unis, une décision du Conseil général du National Pollutant Discharge System en date du 7 mai 1975 relative à l'autorisation d'égouts municipaux aboutissant directement à la mer.

12 Voir le paragraphe 4 de la loi fédérale allemande sur la protection contre les immissions, le décret belge des 8-10 juillet 1871, l’art. 27 de la loi française du 19 juillet 1976, etc. Belgique, art. 16 du Règlement général approuvé par arrêté du 1er février 1946, décret français du 1er avril 1964, art. 17.

13 Voir, en particulier, la loi danoise sur la protection de l'environnement du 13 juin 1973, art. 35, al. 1, n° 2.

14 Législations allemande, danoise, française, irlandaise, etc. ...

15 Ainsi en France les activités qui échappent à la législation sur les établissements classés peuvent quand même être soumises à certains contrôles.

16 Voir notamment l’art. 15 du Règlement général belge, l’art. 10 de l'arrêté royal grand-ducal luxembourgeois du 17 juin 1872, l’Alkali Act de 1906 applicable en Irlande, etc.

17 Danemark, Irlande, Royaume-Uni. Toutefois, toutes les installations pouvant causer des pollutions peuvent être soumises à autorisation sauf exceptions définies par la législation. Voir les Florida Rules on Permits of the Department of Pollution Control, de 1970.

18 France, République fédérale d'Allemagne.
21 Voir, en particulier, la loi française du 19 juillet 1976.
22 Voir la législation belge, luxembourgeoise et française.
23 C'est le cas, notamment, en Belgique, au Luxembourg et aux Pays-Bas. Aux États-Unis
24 la Section 401 du Federal Water Pollution Control Act prévoit une coopération organique entre les organes fédéraux et les États.
25 Voir, pour la pratique des États-Unis dans ce domaine: W.H. Rodgers, Handbook on
27 Loi danoise sur la protection de l'environnement, art. 39, al. 3, loi française du 19 juillet 1976, art. 27.
28 C'est le cas de la Belgique, de la France, des Pays-Bas et de la République fédérale d'Allemagne. D'autres pays connaissent la consultation du public sous des formes plus ou moins indirectes: au Danemark les intéressés peuvent exiger de connaître les documents relatifs aux affaires traitées par l'administration et faire des observations en vertu de textes autres que la loi sur la protection de l'environnement. Au Royaume-Uni certaines lois prévoient une procédure d'objection.
29 C'est la pratique en Allemagne, en Angleterre, en Irlande, aux Pays-Bas, etc.
30 Allemagne, Irlande, Pays-Bas.
31 Règlement général, art. 4, dernier alinéa.
32 En particulier en Allemagne fédérale, aux États-Unis, en Irlande.
33 Etats-Unis, Irlande.
34 Allemagne fédérale.
35 Voir pour exemple, les lois irlandaises sur l'administration locale de 1963 et de 1976, la loi française du 19 juillet 1976, etc.
36 C'est le cas de la loi néerlandaise sur la pollution de l'air de 1970.
37 Paragraphe 10 al. 5 de la loi fédérale allemande sur la protection contre les immissions et paragraphe 10 du projet de règlement sur les principes de la procédure d'autorisation.
38 Il en est ainsi en Belgique, en France et au Luxembourg.
39 C'est, en particulier, la pratique en Allemagne fédérale et au Danemark.
40 Voir, par exemple, au Danemark, les instructions de la Direction générale de la protection de la nature et de l'environnement.
41 Voir, par exemple, les instructions techniques édictées par le Gouvernement fédéral allemand en vertu du paragraphe 48 de la loi fédérale de la protection contre les immissions.
42 Ces éléments sont tirés des pratiques allemande, américaine, belge, danoise, luxembourgeoise et néerlandaise.
43 Pays-Bas: loi sur les nuisances de 1952 et art. 27 de la loi sur la pollution de l'air de 1970.
44 Cfr. également Lummer, p. 244-245.
44a Cfr. également Günthner, p. 145 et seq.
45 Voir ainsi l’art. 13 de la loi française du 19 juillet 1976, le paragraphe 2 de la loi fédérale allemande sur la protection contre les immissions.
46 Paragraphe 17, al. 1 de la loi fédérale allemande sur la protection contre les immissions; art. 21 du Règlement général belge; article 20 de la loi italienne du 15 juillet 1968 sur la pollution atmosphérique.
47 C'est, en particulier, la pratique au Danemark, aux États-Unis et au Luxembourg.
48 Cf. Delsaux-Marty, p. 265 et seq.
49 Convention d'Oslo pour la prévention de la pollution marine par les opérations d'immersion effectuées par les navires et aéronefs, du 15 février 1972; Convention de Londres sur la prévention de la pollution des mers résultant de l'immersion de déchets, du 29 décembre 1972; Protocole relatif à la prévention de la pollution de la mer Méditerranée par les opérations d’immersion effectuées par les navires et aéronefs, du 16 février 1976.
50 C'est le cas des conventions concernant l'immersion de déchets: Convention d'Oslo, art. 5; Convention de Londres, art. IV; Protocole sur la Méditerranée, art. 4.
51 Il en est ainsi principalement pour les règles concernant le rejet de substances chimiques dans les eaux douces ou dans les eaux en général: Convention de Bonn relative à la...
protection du Rhin contre la pollution chimique, du 3 décembre 1976, art. 3; Directive du Conseil des Communautés européennes du 4 mai 1976 concernant la pollution causée par certaines substances dangereuses déversées dans le milieu aquatique de la Communauté, art. 3; mais aussi Convention de Helsinki pour la protection du milieu marin dans la zone de la mer Baltique, du 22 mars 1974, art. 6 (qui concerne la pollution tellurique).

52 Convention d’Oslo, art. 6; Convention de Londres, Art. IV, Protocole sur la Méditerranée, art. 5; Directive des Communautés, art. 7; Convention de Bonn relative au Rhin, art. 6 al. 4, etc. ... 
53 Convention d’Oslo, Annexe III, Convention de Londres, Annexe III. 
54 Voir, par exemple la Convention de Londres du 1er juin 1972 pour la protection des phoques de l’Antarctique, art. 3 et 4; l’accord d’Oslo du 15 novembre 1973 relatif à la conservation des ours blancs, art. 3, etc. ...
55 Voir la Convention de Washington du 2 décembre 1946 pour la réglementation de la chasse à la baleine et les textes élaborés par la commission instituée en vertu de l’art. 8 de la Convention, l’accord entre les États-Unis et le Japon du 25 novembre 1964 sur la pêche des langoustes au large de l’Alaska, etc. ... 
56 Voir, par exemple l’art. XII al. 2 de la Convention de Washington du 3 mars 1973 sur le commerce international des espèces sauvages de flore et de faune menacées d’extinction ou l’art. 11 de la Convention de Londres de 1973 sur la prévention de la pollution par les navires.
Environmental Impact Assessment
by Geoffrey Wandesforde-Smith

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I. Introduction

Environmental impact assessment (EIA) is an instrument of environmental policy having the general form of a process designed to ensure that a conscious and systematic attempt is made to assess the environmental consequences of choosing between various options which may be open to decision makers. The design and use of such an instrument, whether it occurs in government or the private sector, is intended to make it clear, at a minimum, what the environmental effects of alternative courses of action will be. In the government case,
which is the one considered here, EIA is usually also intended to help administrative authorities to achieve the objectives of environmental public policy. This may involve minimizing the environmental damage caused by projects and programs carried out by government, and those which government authorizes and approves in the private sector. It could also involve the selection by government of only those actions that can be shown to improve environmental quality. This last standard is generally thought to be too extreme, however. The purposes of most existing EIA processes can be satisfied if government actions mitigate their impacts on the environment as much as possible. The assumption is that this will contribute to the overall improvement of environmental quality, even though many non-governmental actions have a bearing on what that quality is at any one point in time, and how it changes over time.

The knowledge that EIA can be a helpful instrument of policy does not, of course, amount to very much. A general definition of EIA is little more than a way of restating the notion that a wise and cautious person should look before leaping. It is impossible to know how helpful an EIA process is, or might be, without looking at the variety of circumstances in which EIA is applied, or might be introduced, and without considering the various ways in which the general definition of EIA can be given concrete expression.

In the last decade, the diffusion of interest in EIA as an instrument of environmental policy has become one of the most remarkable and controversial worldwide trends in environmental law, and the spread of interest shows every sign of continuing. The variety of circumstances in which EIA has been held to be helpful is so great, however, and the variety of EIA processes that have been designed is so large, that it is now very difficult to argue that the idea has any one clear meaning. In some respects, EIA in its most general form is hard to distinguish from what governments do already when making decisions. No government wants it to be thought that when environmental issues are at stake it does not look before it leaps. The question of whether EIA can make any distinctive contribution to decision making thus becomes tangled up with questions about the range of policy instruments and decision making procedures governments already have at their disposal. And it is conceivable that such existing instruments may be found to yield results that are functionally equivalent to those that can reasonably be expected from an EIA process.

To arrive at a more precise understanding of what EIA is, and of what it is that EIA does that is not done or not done as well by other policy instruments, it is helpful to begin with experience in the United States. The first formal process of EIA was created in America by the National Environmental Policy Act of 1969 (NEPA), and American experience has tended to be a model others have looked to in deciding whether and how to design EIA processes of their own. The discussion of American experience will focus on the ways in which and the reasons why EIA is thought to be effective. This is followed by an analysis of what has happened when other countries have tried to learn from American experience, and the variety of EIA processes that have resulted from this attempt at transfer. The implications of this additional experience for the design of further EIA processes is considered in a concluding section.
II. The American Model of EIA

When EIA is examined in an international context, it tends to be forgotten that three-fifths of the American states have EIA requirements. Less than half of these can be considered little NEPAs, in the sense that they follow in significant respects the form and function of the federal legislation. Analysis of state EIA processes has been more concerned with the nature of legal requirements in the states and their implementation than with explaining the diffusion of EIA at the state level and the variety of innovations it has spawned. It is clear, however, that the adoption of EIA has sometimes followed from a different set of political circumstances than those that prevailed at the federal level when NEPA was passed. Moreover, the variety of state processes is such that it is quite misleading to suppose that experience under NEPA is representative of American EIA practice as a whole. The following discussion of the American model of EIA represented by NEPA needs to be seen in the context of this caveat.

1. The origins and purposes of NEPA

There is a long tradition of criticism directed at the performance of those agencies of the United States federal government that have responsibilities for natural resources development and management. There is an equally long tradition of reform proposals, none of which has been very successful in producing major shifts in either federal policy or the distribution of the benefits and burdens stemming from that policy. To some extent, NEPA can be understood as an attempt to build upon both these traditions, and thus as simply the most recent effort to find an effective legal means of constraining administrative behavior in the interests of established values such as economy, efficiency, coordination and responsiveness.

In the past, overall federal policy has not itself been the object of reform. Attention has been directed instead at other attributes of the internal and external environments of federal agencies that together form the framework for administrative decision making. There has been much criticism of the methods, or more accurately the inadequacy of the methods, used by federal agencies to make decisions, for example. This has led to the introduction of more formal methods, most notably cost-benefit analysis, and to changes in the way agencies are staffed and organized internally to take advantage of various kinds of professional expertise. Reforms of agencies' external environments have focused at different times on such factors as inter-agency relations, patterns of interaction with client and constituency groups, and the terms and conditions under which there can be review of administrative decision making by the courts. Remedies have been sought, respectively, in administrative reorganization, new requirements for public participation, and the restatement by Congress of the legal mandates defining particular agency missions.

It would be wrong to suppose that the overall character of federal policy has escaped criticism. The awareness that, even if all known internal and external reforms were implemented, the net result of all federal agency activities might still not add up to a coherent national policy was simply never translated into the perception that a legislative statement of such a policy could itself be a powerful instrument of administrative reform. The main purpose of NEPA was
to add to the array of instruments available for influencing administrative behavior an overarching statement of national environmental policy, and to create the means whereby this statement could impinge on the activities of every federal agency.

With the benefit of hindsight, there has been criticism of NEPA for the vagueness and ambiguity of the language expressing national environmental policy and for over-reliance in the Act on the environmental impact statement provision as a means of implementation. Criticism of the notion that agency actions vis-a-vis environmental issues could be significantly changed by the simple declaration of a national policy is tantamount to an assertion that other variables are more important determinants of federal administrative behavior than the presence or absence of such a declaration. It is an assertion that Congress was urged to act on an incorrect theory. The desire of NEPA's managers in Congress to strengthen the action-forcing sections of the law at a very late stage in consideration of the bill can be taken as evidence that at the last minute Congress recognized that a policy declaration on its own would not make much difference.

It is important to recall, however, the political setting in which NEPA was enacted. The idea that the environment could form a new focus for public policy was never advanced on the basis of a well-developed and clearly articulated set of expectations about how it would be reflected in individual decisions across the entire range of federal government responsibilities. On the contrary, it was argued that the merit of the idea could only be discovered after it was adopted and put to the test. Congress accepted the idea as one way of signifying its willingness to respond to the wave of public concern about environmental issues that peaked in the United States at the end of the 1960s. But it was as clear in 1969 as it is now that Congress perceived NEPA as complementary to other environmental legislation and that the continuing debate on environmental policy would extend over a wide range of both legislative and executive branch initiatives.

In the particular case of NEPA, Congress found it useful to accept the argument that federal agency actions are major causes of environmental degradation. Whether federal agencies are really more deeply implicated in causing environmental problems in the United States than state and local government agencies or private corporations and individuals has never been established, and probably never will be. The politically relevant point is that direct and indirect federal government involvement in activities that affect the environment is sufficiently large, and, in the case of some agencies engaged in large-scale development programs, sufficiently visible and controversial, for conscious environmental assessment of them to seem worthwhile. Moreover, by insisting that at least those agencies over which it can exercise some control are forced to make environmental assessments, Congress could hope to set an example for state and local governments, and provide the nation as a whole with leadership in the proper conduct of environmental affairs.

In retrospect, the symbolic value of NEPA has come to seem less important than its value in forcing substantive changes in thousands of agency decisions. In the beginning, however, the main concern was with capitalizing on public
opinion to create a political climate favorable to the serious consideration of environmental issues and at least the rudiments of an administrative process to make it clear whether or not that consideration was occurring in the federal bureaucracy.

2. The effectiveness of NEPA

After Congress had taken these steps, two things became clear. One was that NEPA could be used by skillful and persistent attorneys for environmental interest groups to push federal agencies much further and much faster towards consideration of environmental concerns than anyone had expected. And second, despite considerable pressure for reconsideration of the burdens that legal exploitation of the uncertainty and ambiguity of NEPA had placed on federal agencies, it became clear that neither Congress nor the White House was prepared to intervene on more than an occasional basis in the political processes set in motion by this exploitation.

The most significant developments have occurred through the legal process as a result of an elaborate dialogue between federal agencies, federal judges, and environmental interest groups. Over the last decade, the question of how to make EIA an effective process has been disaggregated into a host of much more specific issues raised by particular agency decisions. This has resulted in some clarification of the law of impact assessment. By its very nature, however, the legal process cannot deal with the problem of effectiveness except on a piecemeal basis. Despite a large number of decided cases, it is difficult to aggregate the decisions into clear general rules that have been established as essential to the meaningful operation of NEPA. The problem is made especially difficult because courts act only on issues that are brought before them, and over time, and partly as a result of judicial decisions already made, there has been a change in the issues litigants believe it is important for the courts to decide with respect to the Act.

Initially, there was some expectation that the courts would play a progressively more important role in fleshing out the vague and ambiguous language of NEPA. Much of the early litigation focused on the elaboration of procedural issues in an effort to persuade the courts, and through them the agencies, that it was to be taken seriously, that it was to be widely applied, and that it required much more than a pro forma response from federal officials. When it became clear that the courts would insist on strict procedural compliance, the focus shifted to involving the courts in substantive review of the merits of agency decisions in the light of the policies stated in section 101 of NEPA. It seemed pointless to insist that agencies produce procedurally impeccable impact statements if they were not clearly constrained by the law as a whole to base their decisions on them. A basis for substantive review under NEPA has indeed been established, but this has not occurred in quite the way expected. The attempt to secure substantive review has not so much followed the resolution of procedural issues as it has become part and parcel of it.

In recent litigation, two issues have been particularly important. One is the question of how early in its decision making an agency must begin the EIA process: at what point does an agency have before it a proposal for action that is
suitable for assessment. The other is the question of what an adequate impact statement must contain, particularly by way of a discussion of alternatives to the proposed action. These issues have surfaced because it has become increasingly apparent to environmental litigants that the probability that EIA will yield better environmental decisions can be enhanced if the process is used not only as a device to assess specific projects but also as a means of assessing decisions in the early stages of policy and program planning. Even thoroughly evaluated projects may be undesirable if they are part of an overall policy or program that is environmentally detrimental. The courts have been asked to deal with these ostensibly procedural issues about the proper timing and scope of impact statements in the expectation that judicial review of administrative decision making under NEPA could be substantially expanded, but the results, from an environmentalist point of view, have not yet been very encouraging.

The main reason for this is that the more the courts are asked to probe into agency procedures for deciding when EIA should begin and how extensive it should be, as a means of pushing EIA into the realms of policy and planning, the more it is apparent that such procedures do not exist, or at least that they cannot be dealt with under the usual concept of procedural review. The problem for the courts is partly one of developing procedures, as well as insisting that those that do exist and are reasonable be complied with. And in these circumstances, the established concepts of procedural review, and of the distinction between procedural and substantive review, become extremely hard to maintain. Efforts to ensure that EIA begins at the very earliest stages of agency decision making, for example, can be defended on the grounds that they promote a procedural principle essential to an effective impact assessment process. When agency decision making is examined, however, it is very difficult to tell exactly when policy and program decision making does or should begin and who is or should be involved. And the further the inquiry is pushed into the formative stages of decision making the greater the difficulty becomes.

There are important differences between project decision making and decision making with respect to policies, plans and programs that underlie this difficulty. In the case of projects, it is usually reasonable to assume that much of the decision making process occurs within or is centered upon a sponsoring agency. There is an organizational entity to which a court may address a procedural ruling with the expectation that a response will follow along the lines prescribed, and will be more or less confined to the agency and action at issue. In the case of policy and program decision making, by contrast, the essential processes are interorganizational. They involve shifting and complex relationships within and among agencies, and between agencies, Congress, and client and constituency groups, and even courts themselves. Although court prescriptions about what procedures should be followed in this context might be addressed to a single organization, they are bound to have an effect on a broader set of administrative and political relationships, and thus to have consequences, albeit uncertain, for issues other than the one at bar.

Questions about the timing and scope of policy and program impact statements are therefore procedural not merely in the sense that they relate to the standard operating procedures that particular agencies already have in place but also in the sense that they deal with the operation of the larger political framework.
within which agencies, and courts, are embedded. If courts agree to take on the resolution of procedural issues in this latter sense, they inevitably become involved in political and administrative, as well as legal, judgments that have a profound influence on the substance of policy. Courts are well aware of this. They are equally well aware that there are sound constitutional reasons for self-restraint in the face of opportunities to expand the limits of judicial review in the cause of environmental protection, or any other cause. It is for this reason that some courts, including the Supreme Court, have recently reaffirmed the importance of leaving to administrative and political discretion some of the key judgments about the timing and scope of policy and program impact statements that environmentalists would like to see judicially constrained.

These recent changes in the significance of litigation in shaping the outlines of EIA practice in America have reaffirmed the importance of other political processes and institutions in contributing to the effectiveness of NEPA. To the extent that the courts remain reluctant to review and reshape the procedures by which agencies formulate policies and programs, for example, the focus of efforts to further the development of EIA for this purpose must shift more than it has already to the ability of the Council on Environmental Quality to influence administrative behavior and to the pressure that environmental interest groups can exert on agencies by more informal and less adversarial processes than litigation. The new regulations for the implementation of NEPA adopted in November 1978 by the Council on Environmental Quality and the growing interest of environmental groups in EIA as a basis for mediating and otherwise negotiating solutions to environmental conflicts are both indications that, as experience under NEPA enters its second decade, the practice of EIA in America is revealing important new facets of EIA effectiveness, outside as well as within the legal process.

The question of what constitutes an effective EIA process in the United States therefore has to be answered at more than one level. In one sense, it can be argued that EIA is effective in America because, through a powerful combination of circumstances, events and personalities, it has changed the way agencies behave. The pervasive impact of EIA on administrative decision making has come about partly because Congress adopted and chose to sustain a vague and ambiguous statute, partly because environmental groups have had the resources and skills to exploit this ambiguity, and partly because the courts have been prepared to assist this exploitation. The combination of these external factors would seem to have left agencies with no option but to make substantial changes in the way they identify and consider the environmental impacts of their actions. The result has been a significant improvement in environmental decision making in a relatively short time. In this sense, the primary object of an EIA design process intended to transfer the effectiveness of the American model to another country ought to be to create a comparable combination of external pressures.

Defining the effectiveness of NEPA by tying its implementation to particular changes in administrative decision making forced on agencies by people who know better and happen to have had the law on their side attributes too much importance, however, to only one source of change and one meaning of effectiveness. It incorrectly assumes, to put it simply, that the acid test of effec-
tiveness is the making by administrative agencies of optimal or environmentally correct decisions, as these are defined externally to the agencies themselves. The central facts about the operation of EIA in America are that effectiveness has never had this or any other single meaning and that responsibility for what has happened has been broadly shared. Far from being clear and fixed, the meaning of EIA effectiveness in America has been continually reconsidered and redefined, and agencies have had as much to do with this as anyone else. It is, after all, their proposed implementation of NEPA that has been challenged on a case by case basis in the courts. Until recently, the challenge has been directed primarily at redefining the legal limits of the decisions that agencies can propose to take on their own account, but this has inevitably and increasingly raised questions about the need to redefine and restructure, whether by judicial or other means, the changing relationships between agencies and other actors in the political system that give rise to specific action proposals. Different political, administrative and legal interpretations of the effectiveness of EIA have developed and exist side by side in the United States, and over time attention has focused more on the value of EIA in modifying the decision process itself in the light of these ideas than on its value in producing particular kinds of decisions within a given decision making framework that remains largely unchanged.

The American model of EIA is effective in this sense because it has allowed, even encouraged, the practice of impact assessment to become the basis for a social learning process with respect to environmental policy in the United States, a process in which different institutions play different roles at different times under varying sets of conditions and in which multiple and even conflicting conceptions of environmental policy coexist. Inasmuch as this development has depended on what NEPA leaves open about the proper institutional form and structure of EIA, rather than on what it specifically provides, a principal lesson of American experience for other EIA design processes is that too much specificity is a bad thing. An over insistence on specificity may very quickly put EIA under strain because it fixes on a single definition of effectiveness and binds the EIA process too closely to a set of political and administrative conditions that EIA is in part intended to change. This lesson holds regardless of whether the quest for specificity takes the form of copying every detail of current American practice or of deliberately trying to avoid it.

To some extent an EIA process has to be fitted to an existing pattern of interaction among the many variables that influence environmental policy in any particular country at any given point in time, if only to gain some measure of acceptance. The dynamics of this pattern are not completely controlled or influenced by an EIA process, however, even though EIA will have some effect on how the pattern changes. The need to take careful account of, or to secure a good fit with, an existing situation to get EIA established has to be balanced in the design process against the need for EIA to remain influential when circumstances are altered, and especially when the boundary conditions that warranted the original design choices are modified. If this is not done, the chances are that attempts to assess the environmental consequences of the choices open to decision makers will occur outside the framework of an EIA process and will be less conscious and less systematic than would otherwise be the case.
III. Alternative Models of EIA

The consideration that other countries have given to the need for EIA and to the relevance of American experience has taken many different forms. It has generally been acknowledged that there is some advantage to be gained from introducing an EIA requirement at the national level based on section 102(2)(C) of NEPA, the environmental impact statement provision. Every formal adoption of EIA that has occurred outside the United States since 1970 has contained such a requirement in one form or another, usually in the administrative order establishing the detailed procedures for impact assessment rather than in the legislation or other government action that introduces EIA. Beyond this, however, analyses of the need for EIA have stressed the desirability of avoiding imitation of the other key features of NEPA, namely the declaration of a national environmental policy and the creation of a central environmental advisory body comparable to the Council on Environmental Quality. In some cases, it is reasonable to suppose that these departures from the American model have been justified on the grounds that equivalent arrangements already exist. A more important reason why NEPA has not been treated in its entirety as model legislation, however, is that there are a number of differences between the political environment giving rise to the adoption of EIA in the United States and other countries.

In the United States, it will be recalled, the enactment of NEPA was meant to signify congressional responsiveness to widespread public concern about environmental issues. In 1969, the notion that environment could be a useful focus for public policy had received little recognition at any level of government in the sense that new institutions and processes had been created, or existing ones reorganized and renamed, to engage in environmental administration. It seemed particularly appropriate to adopt a national environmental policy because, despite the considerable involvement of the federal government in activities affecting the environment, there was no existing national policy or program that could arguably form the basis for a new and more comprehensive approach to environmental problems. In contrast to the situation in many of the American states and other countries, the federal government had no program, nor even any clear legal authority, for land use planning, for example, or for broad planning of economic and social development. In short, there was a demand for change originating in large part outside the immediate context of government itself and no reasonable basis for arguing that the federal government already had in place some of the institutional and procedural building blocks required for environmental administration at the national level.

In other countries, the environment has obviously been different in the sense that the American initiative was already on the table when consideration of EIA began. One consequence of this, given the fanfare that surrounded the final adoption of NEPA in the United States and the subsequent promotion of the Act as a major environmental policy innovation that has occurred in a variety of intergovernmental contexts at the international level, is that governments themselves have been among the first to acknowledge that EIA might be valuable. Indeed, in most cases very little prompting has been needed from environmental groups and interests to put consideration of EIA on national political agendas. There has also been a receptive audience for EIA in the environment ministries
several countries had created by the time EIA consideration began. As a result of these and other factors, the evaluation of EIA has tended to begin with the assumption that in many respects existing arrangements for environmental decision making at the national level are basically sound. Instead of being regarded as an opportunity to bring about a fundamental reorientation of government policy, the introduction of EIA has been treated as a means of improving limited aspects of existing administrative practice.

There are nevertheless variations in the approaches to EIA adopted outside the United States. In all cases, as in the United States, there has been a tendency for the prevailing definition of what constitutes an effective EIA process to change over time. The variety of approaches makes it difficult to classify or order the several national experiences according to any hard and fast rules. In the following analysis, only a broad distinction is made between relatively early adoptions of EIA, where there is some implementation experience, and later or still pending adoptions, where implementation is much more uncertain. Beyond this, it seems most useful to treat each case individually in order to draw the appropriate conclusions.

1. Early adoptions of EIA: Federal Republic of Germany, Australia, New Zealand and Canada

The EIA processes in the Federal Republic of Germany, Australia, New Zealand and Canada all represent the outcome of efforts by the government of the day in each country to capture the administrative benefits of American experience without incurring its political costs. In each case, it was deemed appropriate for the Cabinet to establish a basic commitment to assessing the environmental impacts of national government actions and to lay down a very broad framework in which this should occur. The task of fleshing out the details would then become a matter for which the administrative departments of government were primarily responsible, subject in some cases to guidance from a central administrative unit and in all cases to the overall direction of the Cabinet as a whole. Under this approach, it was expected that no serious question would arise about EIA creating new opportunities for judicial review of administrative decision making or more widespread public involvement. On the contrary, the expectation was that EIA would simply be added on to all existing decision making procedures where the government departments and ministers concerned believed it could usefully supplement existing practice. The object was to provide the government with the means to adjust its activities without creating new administrative uncertainties or delays and disruptions to the decision making processes relating to development activities.

Despite this common element in their overall approaches to EIA, the four countries concerned have each followed somewhat different paths in providing a legal and institutional basis for the conduct of EIA. In West Germany, the Cabinet action takes the form of a resolution adopted in August 1975 to spell out the principles that should guide federal agencies in assessing the environmental impacts of their actions. The resolution is based, however, on the assumption that it is only needed to cover those actions for which there is no existing legal provision for protection of the environment. It also assumes that federal agencies can be relied upon to decide whether they need to invoke the principles, and, if
so, to decide how and when to comply with them. The provision for EIA as a distinct and formal administrative process is thus minimal in West Germany. Apart from adopting a resolution on the subject, the government has taken no real steps either to insist that EIA be practiced or to encourage those agencies that would like to see it practiced. The result is that EIA has not had much impact in West Germany, except on an occasional and ad hoc basis.

In the other three countries, the Cabinet decisions have been more consequential. In Australia, EIA was introduced by a Cabinet decision in May 1972. In 1974, following a change of government at the Commonwealth level, EIA was given a basis in legislation by the Environment Protection (Impact of Proposals) Act. One ostensible reason for introducing legislation, instead of relying on a Cabinet decision, was the desire of the government to make EIA a more open and public process by providing for the conduct of commissions of inquiry into major environmental issues. Two such inquiries have been held, both in connection with mining proposals, but further use of this technique seems unlikely. For the most part, EIA in Australia has been and will continue to be used sparingly and only in circumstances where there is a judgment by the Environment Minister that it can usefully supplement existing departmental procedures. Between July 1975, when the administrative procedures for implementing the Australian law were released, and mid-1977, it is reported that a total of 6,400 proposed actions were reviewed. Some 650 of these were regarded as being environmentally significant, but only thirty-three became the subjects of environmental impact statements.

The shift in Australia from an EIA process based on a Cabinet decision to one based on legislation was designed to preserve two key aspects of the government's original position on EIA. One was that the judiciary should be excluded from any significant new involvement in the review of administrative decision making. The legislation has already been the subject of a limited amount of litigation, however, and it is conceivable that skillful use of some of the legal uncertainties surrounding the law could involve the courts in both procedural and substantive review of compliance with EIA requirements.

The shift to legislation was also supposed to maintain the discretion that ministers had under the Cabinet decision to decide most of the key issues about whether and when an impact statement is needed, what it should contain, whether a draft is to be made available for public comment, and whether a public inquiry must be held. The original assumption was that by avoiding broad legislative statements about the purposes of EIA and the actions for which it would be required, ministers would have maximum flexibility in their efforts to guarantee the smooth integration of EIA with existing administrative procedures, and thus to determine the effectiveness of EIA. In effect, the Australian position was that, by making it clear from the outset that ministers would have the undisputed authority to resolve uncertainties about EIA, its introduction would be much simpler, much less disruptive and much less expensive than it had been in the United States.

In fact, the heavy emphasis on ministerial discretion has not guaranteed a smooth transition. As predicted in the parliamentary debates preceding enactment of the Australian law, Commonwealth Ministers of the Environment, who
are responsible for administering the Act, have been suspected of exercising their
discretion, and thus defining the terms and conditions for the application of
EIA, on the basis of what is politically expedient for the government. Over a
limited number of issues, a government with a comfortable parliamentary
majority can expect to sustain its judgments in the face of such criticism. As the
number and range of issues about the applicability of EIA has increased,
however, both because there is a Commonwealth EIA process and because the
states have also moved to adopt EIA, uncertainties about the nature of EIA
requirements and how they are to be implemented have had to be resolved on a
more systematic basis. The Environment Ministry has been drawn into
negotiations with other Commonwealth departments and with the states to try
to resolve these issues.

These negotiations are continuing, but it is already clear that the ministerial
discretion granted by the Commonwealth EIA process will have to be exercised
on much more of a shared basis than was originally contemplated. Despite the
desire to introduce EIA without provoking a basic reassessment of environ-
mental decision making arrangements in Australia, adoption of EIA is having
precisely this result. In contrast to the United States, Australian experience with
EIA has been much more influenced by administrators and agencies than by
interest groups and courts. This difference in the main political actors involved
should not, however, be allowed to obscure the fact that, once a serious commit-
tment to the practice of EIA was made in Australia, questions were raised about
who should be involved in making environmental decisions and not just about
what kinds of decisions should be made. Commonwealth departments and state
authorities have been quick to realize that, even though application of the
Commonwealth EIA requirement started out by being confined to major govern-
ment development projects, it could not help but spill over into an examination
of underlying policies and plans at all levels. They have been equally quick to
insist that their policy and plan responsibilities should not be redefined without
their being fully involved in the process. In this respect, despite a number of
other obvious differences, Australian and American experience with EIA has
become quite similar.

In New Zealand, EIA was introduced by a Cabinet decision in August 1972. The
decision created the New Zealand Commission for the Environment, which drew
up the guidelines for EIA in the form of Environmental Protection and Enhance-
ment Procedures. These were approved by the Cabinet in November 1973 and
became effective on 1 March 1974. As in Australia, the emphasis in New Zealand
is very much on the limited use of EIA by the government on a discretionary
basis. The discretion is exercised in the first instance, however, by the individual
departments of central government, rather than by the Environment Minister as
in Australia. These decisions may be reviewed by the Commission for the En-
vironment, which can ask the Environment Minister, in consultation with other
ministers concerned, to direct that an environmental impact statement be
prepared. The Commission also has the responsibility of auditing all completed
impact statements. Its audits are published and include an analysis of public
comments. Between March 1974 and March 1978, the Commission completed
sixty-two audits, approximately a third of which have involved energy pro-
jects.
The decision to assign overview responsibility for EIA procedures to a distinct administrative unit has been an important influence on New Zealand's experience with EIA. The Commission for the Environment has a staff of thirty and is subordinate for reporting purposes to the Environment Minister. The objectives of the Commission make it clear, however, that its responsibilities extend across the full range of ministries and government functions. It is not directly comparable to the Council on Environmental Quality in the United States. Since 1970, New Zealand has had a broadly constituted Environment Council to advise the government on environmental policy. More recently, other advisory groups have been created in New Zealand on matters directly related to environmental policy. The Commission for the Environment works very closely with these bodies, but its main objective is less to provide advice than to act as a catalyst for change in both public and governmental attitudes and approaches to environmental issues. It is active in a number of studies and other activities designed to develop and encourage the consideration of new ways of dealing with environmental problems. It is also engaged in a continuous dialogue with government departments to persuade them to improve their procedures for environmental planning and management. This latter activity is an outgrowth of the Commission's EIA responsibilities, and as such it affords one of the clearest illustrations outside the United States of the tendency for EIA, once instituted, to provoke a basic reconsideration of environmental decision making arrangements. The Commission has summarized this development as follows:

The Commission's role and development have been unique within the machinery of government. Its mandate is wide-ranging and flexible, combining the traditional constitutional relationships of a government agency to its Minister with its independence in operating the environmental protection and enhancement procedures. Its development has evolved from an initial focussing onto projects through the procedures to the promotion of more general and fundamental issues. It is doubtful whether any other government agency has enjoyed the same freedom to initiate or to develop the direct public relationships it has.

The Commission's role has evolved within the context of both the greater environmental awareness of government departments and the expectation of those departments that the Commission should concern itself with broad issues as well as specific projects. In developing, the Commission has both influenced, and been influenced by, other government agencies.

This statement indicates that the introduction of EIA in New Zealand and assignment of overall responsibility for implementation to the Commission does not in and of itself explain the gradual transformation of environmental decision making now under way. The political environment in New Zealand has been favorable to this development, and the opportunities for change created by the Cabinet in 1972 have been skillfully exploited by both the Commission and other groups. The statement also hints at the difficulty the Commission has had, and continues to have, in persuading government departments that EIA can be implemented so as to accommodate their established responsibilities for project, plan and policy decision making.
Nevertheless, what began in New Zealand, as in Australia, as an attempt to introduce EIA in a way that would contain its broader political implications has had consequences not unlike those found in the United States. That this development appears to have gone further in New Zealand than in Australia is partly accounted for by the allocation of responsibility for EIA to a quasi-independent administrative unit, which has had an institutional interest in seeing that EIA makes a difference. Experience in Canada lends some support to this view.

In Canada, EIA was introduced by a Cabinet decision in December 1973. The decision created the Federal Environmental Assessment and Review Process, which became effective on 1 April 1974. General EIA procedures were developed by the Environment Minister, through the Interdepartmental Committee on the Environment, in September 1974. As in New Zealand, the primary responsibility for observing the procedures rests with each of the affected units of government at the national level. This is why the Canadian process is characterized as one of departmental self-assessment. Departments are assisted by a central unit, now known as the Federal Environmental Assessment and Review Office, located in the Environment Ministry. When departments decide that actions they propose necessitate a formal environmental review, an Environmental Assessment Panel is formed to establish the terms and conditions under which an environmental impact statement should be prepared and to evaluate the statement once it is completed. Like the EIA audits made by the New Zealand Environment Commission, panel reports are advisory to the ministers responsible for deciding whether or not actions subject to assessment should proceed. Between 1974 and March 1978, three projects were reviewed under the Canadian process and panels had been established for a further twenty-one.

As in New Zealand, the EIA process in Canada lacks the force of law and provides limited opportunities for public involvement. To the extent that EIA has made an impact on environmental decision making in Canada, the ability of the small office overseeing the procedures to persuade departments to comply has been important. The office is about one-third the size of the new Zealand Commission in terms of staff, and has none of its ongoing study activities or other means of helping to shape policy. Although the office is small, it appears to have made the most of its limited resources. A recent and detailed analysis of Canadian EIA experience at the federal level concludes that:

Perhaps the most striking feature about EARP, and the one most worthy of comment, is the extent to which it has been transformed from an after-the-fact, phased, and sometimes haphazard process into one instituted at the initial planning stage, with reasonably full public disclosure and full opportunities given to the public to participate through hearings and written submissions. All of this has been achieved without legislation, without any judicial review and, one might speculate, without unanimous Cabinet support for the Process.

As in the case of New Zealand, it would be a mistake to attribute these developments solely to the decision to create an organization with overall responsibility for EIA. In both Canada and New Zealand, although not perhaps for the same
reasons or in the same ways, the political environment has facilitated the gradual transformation of EIA. It is true, however, that in both countries the Cabinet has specifically noted and approved the direction that EIA practice has been taking under the responsible organizations. In February 1977, the Canadian Cabinet agreed to strengthen the EIA process by requiring departments to give the Federal Environmental Assessment and Review Office more complete information about the decisions they take on projects in the early stages of assessment. It also indicated approval of steps designed to ensure that public response to significant federal projects is obtained early in the planning stage and before vital decisions are made. In May 1978, the New Zealand Cabinet similarly confirmed the way the Environment Commission has interpreted the original policy decision to introduce EIA, and specifically approved further efforts to look very carefully at departmental procedures as the basis for negotiating new understandings about how to build EIA into decision making as early as possible.

When the cases of early adoption of EIA are viewed together, they show, with the exception of West Germany, that contrary to original expectations EIA is becoming a principal impetus for redefining, rather than merely supplementing, existing arrangements for environmental decision making on a national basis. The reasons for this development are somewhat different in each case, and there are variations in the extent to which it has occurred. In all cases, however, there has been a gradual turning away from an initial preoccupation with the production of environmental impact statements for large development projects initiated by or significantly involving national government departments, and away from the presumption that the production of such statements can be taken as evidence that established patterns of environmental decision making have indeed been changed. This amounts to a realization that the production of adequate environmental impact statements on projects by national administrative agencies is a necessary and important indicator that EIA is having the desired effect, but it is not sufficient to warrant the conclusion that EIA is effective. To establish effectiveness, there needs also to be evidence that EIA is having an influence on the way national government agencies play their part in a development process that involves not only each of them but also the way they relate to each other and the rest of the policy system.

Such evidence seems to be appearing in Australia, New Zealand and Canada, although it would be wrong to suppose that EIA is therefore having essentially the same effect in each of these countries and that, despite detailed differences in the procedures employed, it is in the final analysis immaterial whether one or another approach to EIA has been followed. In terms of how quickly the development outlined here occurs, who is involved, and what consequences it has for development, there clearly are differences. That the development should occur at all, however, is at least partly attributable to the original Cabinet decision in each of these countries to follow the American example of framing EIA requirements at the national level very broadly and without any detailed attention to their implications for those aspects of the development process where other levels of government and their agencies play a role. In this respect, at least, the early adoptions of EIA are distinct from more recent experiences.
2. Further varieties of EIA: Ireland, France, Britain, The Netherlands, and the European Community

In Ireland, consideration of EIA coincided with the review of town and country planning legislation. The government appears to have decided that the easiest way to introduce EIA would be to include a provision in the new Local Government (Planning and Development) Act making it possible for local authorities to require environmental studies of certain kinds of development, particularly industrial development. No particular importance or urgency was attached to this initiative. As of late 1978, the government had still to issue guidance to local authorities for implementing the EIA provision. The Irish government has taken other steps to give environmental factors more prominence in the activities of central departments, but it is clearly a matter of policy in Ireland to give priority to development. The decision to treat EIA as a process primarily involving local authorities and those aspects of the overall national development process requiring local review and approval will not prevent the raising of policy and program issues when particular projects are assessed. Nor will it exclude the possibility of new relationships developing among administrative units of central government and between them and local authorities. It is difficult to imagine, however, that the practice of EIA in Ireland, once it is established within the limited framework chosen by the government, will have the same kinds of consequences observable in the cases of early adoption.

In France, the government originally intended to make a broad national commitment to EIA in a brief provision of a nature protection bill. Public and parliamentary pressure forced the government to be much more specific about what it had in mind, both by amending the language of the legislation and by issuing a detailed administrative decree on the implementation of EIA. As a result, the scope of EIA in France has effectively been defined in a way that focuses very clearly on project assessment but leaves open to question the linkage that this activity will have to broader issues of government policy and the development programs that flow from them. Departments of central government, as well as local authorities and private developers, will be required to respond to the French EIA process. But, as in Ireland, it is difficult to imagine that the specific limitations placed on the practice of EIA will lead fairly quickly to a basic reassessment of national environmental policy and the means for developing and implementing it.

In France, the situation is unique in that the government has something less than full control over how the EIA process develops. In addition to forcing the government to spell out in advance and in some detail how it proposed to implement its commitment to EIA, critics also won some new rights of access to administrative proceedings and the courts in the Nature Protection Act. These are marginal changes, and it is too early to tell whether and by whom they might be skillfully exploited in a way that would be similar to the role played by environmental groups in the context of the EIA process in the United States. The present emphasis in France is very much on refining even further the precise operational requirements of the law and the decree, and it will be some time before all the affected interests have a clear idea of the impact that EIA is having on environmental decision making. There are signs, however, that the high degree of specificity attempted by the government in an effort to limit EIA to
the evaluation of projects, and some forms of land use planning, is not having
the desired effect. Questions about the value of producing large numbers of
impact statements on projects, and particularly about their value in clarifying
the policy and programmatic bases for project decision making, are already being
raised. The government would appear to be committed to addressing them at the
national level within the framework of the EIA requirement, and the limited
opportunities that do exist for putting pressure on the government under the
French EIA law may force the issue sooner than was expected.65

The decisions in Ireland and France not to follow the American example of
framing EIA requirements at the national level very broadly differentiates the
Irish and French EIA processes from the early adoptions in some respects. In
other respects, however, they are similar. Most notably, neither in Ireland nor in
France was there any significant indigenous experience with EIA before the
decisions were made. In these cases, as in the United States and those countries
where there were early adoptions, design choices were made without any know-
ledge of how administrative agencies and others would react to EIA. The
commitment came first and experience followed, and so it is difficult to say that
the form of the commitment was a matter of deliberate policy in the sense that
it was selected because it was known that it would produce particular conse-
quences. Indeed, in Ireland the avoidance of a broad commitment was probably
a matter of convenience and in France it was forced on the government against its
better judgment.

There are cases, however, where the form of the commitment to EIA does
appear to be a matter of deliberate policy based on experience and where it is
therefore more reasonable than in the Irish and French cases to argue that there
is a divergence from the American and other early models.

In Britain, experience with EIA stems from the efforts of the Scottish Develop-
ment Department to assess the implications of North Sea oil developments. The
government has sponsored studies of EIA and has encouraged local
authorities to use model assessment methods developed at the University of
Aberdeen. The government has insisted that EIA should be viewed primarily as
an adjunct to the land use planning and development review procedures
established under the town and country planning acts, but this has not prevented
consideration of the applicability of EIA to development proposals that would
normally fall outside this limited framework. In the light of the use of EIA it
has encouraged, and after considering the contribution it might make to
alleviating the stress placed on established development review procedures by the
need to assess proposals that are clearly of national rather than local significance,
the Environment Ministry has made a limited commitment to EIA. This has
been done, however, without any implication that the government as a whole
thinks EIA is needed to give effect to a bold new commitment to environmental
policy goals. On the contrary, the implication is that it is being introduced to
deal with problems in the development process where experience has shown it
can be useful to the people who administer that process, and that for other
problems other instruments may be more appropriate.

In the Netherlands, the situation is different inasmuch as the government was
persuaded in 1974 to announce that EIA should be introduced as a matter of
urgency. Since then, however, the Environment Ministry has been carefully exploring the consequences of introducing EIA by using it to evaluate eight major development proposals. The indications are that the Ministry, having defined the experimental uses of EIA rather narrowly in terms of its own particular needs and competencies, is finding it to be very helpful66. But the consequence of this may well be that the Netherlands will finally opt for a much more limited form of EIA than was originally and unanimously recommended in 1973 by a broadly constituted advisory group.

The clearest case of divergence from the American and other early models of EIA is found in the proposals from the European Community Commission's Environment and Consumer Protection Service for an EIA process to be implemented in all nine member states of the Community. These are not directly based on experience, but they are based on a number of detailed studies of land use planning and development review procedures throughout the Community. They are also based on at least preliminary consideration of a much wider range of actions to which EIA might be applied, such as the development of government policies and programs, research and development investments, and the marketing of new products67.

The Commission has recognized that it would be valuable to use EIA as an instrument for evaluating all these types of actions, because decision making with respect to them is highly interdependent. The Commission has also concluded, however, that the design of an EIA process ought to take account of limited administrative skills and resources, and of the impact EIA will have on established administrative procedures. In the Commission's judgment, there is little to be gained from asking administrative agencies to deal with the interdependencies of environmental decision making across many types of actions when there are no established methods for doing this and when the request would overload the administrative system. The Commission therefore proposes to introduce an EIA process that is not only limited in the first instance to assessments of specified major development projects but is also limited in the sense that no extension of EIA to policy, plan and program assessment need be made until it can be shown to be feasible.

The Commission's advocacy of this view is partly based, of course, on a calculation that it is the one most likely to minimize doubts and uncertainties about the implications of EIA and therefore to appeal to the member state governments68. It is also undoubtedly a reflection of the fact that the Commission is principally an administrative institution. Even so, the almost complete separation the Commission is trying to maintain between policy and administration in its EIA proposals represents a dramatic break with previous EIA experience. Even in Britain and the Netherlands, where there appears to be a distinct narrowing of the substantive policy concerns with respect to which EIA is intended to be instrumental, there is at least an established policy framework of planning and development review to guide the practice of EIA and to serve as an evaluative yardstick for what it produces. The Commission has, in effect, taken the view that the introduction of EIA need not initially be linked to substantive policy objectives at all. The Community design process thus more clearly and deliberately attempts to define the nature and effectiveness of EIA as a technique of administrative routine than any other.
IV. Conclusion

One of the characteristic features of previous studies of EIA in the United States and other countries is the search for a model procedure. Early work tended to treat NEPA as model legislation and to suggest that developments elsewhere should converge on the key aspects of American experience, but this is clearly not what has happened. More recently, attempts have been made to take account of European experience and of the need to base model legislation on legal traditions quite different from those obtaining in the United States. There are many issues addressed in studies of this kind how should the scope of EIA be defined, what should be the content of impact statements, who should be responsible for preparing them and have the right to review and comment on them, when should EIA begin, and so on. Perhaps the most crucial issue is that of whether there are to be legal remedies for inadequate compliance with EIA requirements, and one recent comment on this point with respect to Europe observes that:

The continental systems of law admit that only administrative decisions that give rise to objections can be subject to appeal. Until the decision has been taken, no appeal proceedings can be started on the grounds that no impact statement has been produced or that it is inadequate. It is when the decision has been taken and enforced that the irregularity will come to light. If the scope of the impact study has not been accurately defined by means of a list system, loopholes will no doubt be easier to find, and the risk of fait accompli will be greater. It will then be very difficult to find effective remedies.69

The French legislation on EIA may offer a way around these difficulties, and it is perhaps for this reason that French experience now seems to be emerging as a favored alternative to the American model of EIA, at least in Europe. The key assumption in this approach is that it is absolutely essential to give EIA a legal basis in legislation, "to establish the serious, revolutionary character of the new procedure and to show that the reform is not merely an administrative one but a new all-embracing manner of coming to grips with the problems that occur whenever decisions affecting the environment have to be taken". This reflects the belief that:

An internal administrative modification of the decision making process would not be adequate, nor would it be consistent with the general objective (of EIA) which is to measure the foreseeable effects of any scheme and, in the light of public opinion, to consider what courses of action would be least harmful to the environment in the future. For this reason, a universally applicable Act must be passed or a Regulation issued, reflecting the determination of the public to achieve genuine protection of the environment.70

It is not entirely clear, however, that all attempts to introduce EIA should follow this model, any more than they should follow the American model. There are cases where EIA has been introduced and practiced without a basis in universally applicable legislation, or even legislation of any kind. Of course, it is possible to say of EIA experiences in Canada or New Zealand, for example, or in Britain and the Netherlands to use European cases, that they have not resulted
or are unlikely to result in genuine protection of the environment, and that they have no legal value as instruments of environmental policy. This comes very close to saying, however, that effective environmental policy has only one already apparent definition and that its realization can only be guaranteed by a particular kind of legislative arrangement.

It seems much more realistic to suppose, in the light of the analysis in preceding sections of this paper, that definitions of effective environmental policy, and of EIA as an effective policy instrument, will continue to be both multiple and subject to change within and among various countries. The presence or absence of EIA legislation may be an important variable in some countries under some conditions, but it is unlikely to determine in and of itself the effectiveness of EIA in any country. Legislation may, for example, create new opportunities for public involvement and for judicial intervention in administrative decision making, but these are unlikely to have much influence if the public in general and environmental groups in particular lack the resources and skills to exploit them and if the judiciary is disinclined to play an activist role. They are also unlikely to have much effect unless attempts to force administrative agencies to make different decisions are coupled with attempts to encourage and persuade them to explore new ways of solving the problems they face.

There are many variables, legal, administrative and political, that influence both the origins and form of EIA requirements, as well as their development once they are in place. Legislation is one way of stating a serious commitment to EIA as a means of restructuring this complexity in the interest of improving environmental policy, but it cannot ensure that EIA will bring about an improvement. On the basis of past experience, it seems less important to insist that legislation be selected as the way of making the commitment than it is to insist that a serious commitment be made and supported in the knowledge that all those who stand to be affected by it will have a part to play in learning what it means and how to make it work.
Footnotes

1 The use of EIA by companies and corporations, both in countries that have EIA requirements and in those that do not, has received little attention. See, however; McCormick et al., "Effects of the National Environmental Policy Act on Corporate Decisionmaking", Report to the United States Department of Commerce (Jack McCormick and Associates, Inc., Berwyn, Pennsylvania, Dec. 1977), and Cairns, "The Flotta EIA Study", 4 Built Environment 1978, 129-133.

2 This minimalist view of EIA is no longer tenable in the United States, but can be useful in countries where it is difficult to get the government to disclose information about its proposed actions. See Rabie, "Disclosure and Evaluation of Potential Environmental Impact of Proposed Governmental Administrative Action", (1976) Tydskrif vir Hedendaagse Romeins-Hollandse Reg 39-65.

3 The application of EIA need not be restricted to administrative authorities, but experience in the United States indicates the difficulty of applying it in a legislative context. See Comment, "Impact Statements on Legislative Proposals: Enforcing the Neglected Half of NEPA's Mandate", 7 Environmental Law Reporter 1977, 10145-10147.

4 This would appear to be true even in California, where the legislation instituting EIA comes closest to adopting this standard. See Comment, "CEQA's Substantive Mandate Clouded by Appellate Court", 8 Environmental Law Reporter 1978, 10208-10211.

5 This is the standard of effectiveness suggested by Rodgers, Handbook on Environmental Law (St. Paul, Minn., 1977), pp. 738-750. See, however, the discussion of effectiveness in section 112 below.

6 See e.g. the recent summary of interest in Europe and in several international contexts in Prieur and Lambrechts, "Model Outline Environmental Impact Statement from the Standpoint of Integrated Management or Planning of the Natural Environment", Report to the European Committee for the Conservation of Nature and Natural Resources, Council of Europe (Strasbourg, Feb. 1979), and Hassan, "Status of Environmental Protection Legislation in the ESCAP Region", Paper for the ESCAP/UNEP Intergovernmental Meeting on Environmental Protection Legislation (Economic and Social Commission for Asia and the Pacific, Bangkok, April 1978).


8 It should also be noted in connection with later sections of this paper that there have been EIA adoptions at the sub-national level in West Germany, Australia and Canada. The situation in the Canadian provinces and at the municipal level is documented in Emond, Environmental Assessment Law in Canada (Toronto, 1978) and in Canadian Council of Resource and Environment Ministers, Environmental Impact Assessments in Canada (The Queen's Printer, Victoria, B.C., 1977). For the Australian states see Fowler, "Environmental Law: A Review of Legislative Controls Applicable to the Minerals Industry", Paper for the 2nd Annual Conference of the Australian Mining and Petroleum Law Association (Adelaide, 1978), 27-31. For West Germany see GMBI. Saar 1976, p. 722.

9 Rodgers, op. cit., n. 5, pp. 809-822.


13 See e.g.; Mister Z, "The Case for a Department of Natural Resources", 1 Natural Resources Journal 1961, 197-206.


17 Ample evidence that it was not the only response is usefully assembled in Dolgin and Guilbert (eds.), Federal Environmental Law (St. Paul, Minn., 1974).


20 The occasions on which Congress has acted to create exemptions from compliance with NEPA are noted in id. at pp. 138 - i 141. The development of attitudes in the Executive Office of the President are traced in Anderson, op. cit., n. 18, 241 and 250.

21 The most up to date and useful attempts to distinguish what is clear about the law of impact assessment in the United States from what is unclear are Rodgers, op. cit., n. 5, and Liroff (ed.), op. cit., n. 19. A careful reading of these sources reveals, however, that there are still abundant uncertainties to be examined in future litigation.

22 This shift was signaled in Anderson, NEPA in the Courts (Baltimore, 1973), and the enormous legal literature it has spawned is cited in Rodgers, op. cit., n. 5, p. 738. Rodgers observes, however, that: "The substantive predicate of NEPA often is unimportant because NEPA claims may be litigated concurrently with claims arising under other federal statutes with undisputed substantive content. Already mentioned is the fact that strict procedural enforcement alone can bring about changes in results as the agencies see the light of day. Thus, while the substantive content of NEPA is an issue fascinating to the commentators, its day to day significance remains to be demonstrated", id., at 750.

23 One recent and reasonably straightforward application of substantive review under the guidelines established by the Supreme Court can be found in Jackson County v. Jones, 571 F. 2d 1004 (8th Cir. Febr. 7, 1978). The 8th Circuit Court happens, however, to be one of the circuit courts that has endorsed substantive review. Other circuits have not taken this position. See; Liroff (ed.), The Environmental Impact Statement Process under NEPA, II (The Environmental Law Institute, Washington, 1977), pp. 166-167.

24 The leading Supreme Court decisions on this matter are Aberdeen and Rockfish Railroad Co. v. Students Challenging Regulatory Agency Procedures (SCRAP II), 422 U.S. 289 (1975) and Kleppe v. Sierra Club, 427 U.S. 390 (1976). These decisions, among others, are discussed in Comment, "NEPA off the Top: The Supreme Court Interprets Impact Statement Requirement", 6 Environmental Law Reporter 1976, 10164-10168. The decision in Kleppe is particularly concerned with the proper timing of program impact statements, but other decisions have touched on timing as it affects the relationship between program and project statements. See e.g.: Sierra Club v. Callaway, 498 F. 2d 982 (5th Cir., 1974); Scientists' Institute for Public Information v. Atomic Energy Commission, 418 F. 2d 1079 (D.C. Cir., 1973); and Swain v. Brinegar, 542 F. 2d 364 (7th Cir., 1976) (en banc).


environmental Law Reporter 50020-50029; Note, "The Scope of the Program EIS Requi-
1978,767-802.

27 Kleppe v. Sierra Club, 427 U.S. 390 (1976). See also; Natural Resources Defense Coun-
v. Energy Research and Development Administration, 451 F.Supp. 1245 (D.D.C.,
1978).


29 Friesema and Culhane, "Social Impacts, Politics, and the Environmental Impact Assess-

30 40 C.F.R. 1500-1508, 43 Federal Register 55978-56007 (Nov. 28, 1978). In terms of
the preceding discussion, the parts of the Regulations dealing with the scope of impact
statements are 1502.4(a), 1502.9(a) and 1508.25. The timing of statements is dealt
with in parts 1502.4, 1502.5 and 1506.10. Other significant provisions deal with the
length of statements (1502.7), the convening of scoping meetings to identify the issues
needing attention in a statement (1501.7), encouragement of tiered statements
(1502.20), and the issuance of a record of decision for actions subjected to an impact
statement (1505.2). Excerpts from a prototype short-form impact statement prepared
by the United States Geological Survey with the new CEQ regulations in mind are

31 Id. at v 12 - v 27; Rivkin, Negotiated Development: A Breakthrough in Environmental
Controversies (The Conservation Foundation, Washington, 1977); "Conflict Re-
solution", Environmental Comment (May 1977) (a monthly publication of the Urban
Land Institute, Washington); Susskind, "It's Time to Shift Our Attention from Impact
Assessment to Strategies for Resolving Environmental Disputes", 2 EIA Review 1978,
4-8; O'Connor, "Environmental Mediation: The State of the Art", 2 EIA Review 1978,
9-17.

32 This is essentially the strategy recommended by Delogu, op. cit., n. 7, and in a more
European form by Prieur and Lambrechts, op. cit., n. 6.

33 Fairfax appears to recognize that the effectiveness of NEPA can be defined in different
ways. Her main purpose seems to be to dislodge one meaning by another rather than to
deal with the questions that arise when it is recognized that multiple meanings have
existed, and will continue to exist, side by side. Op. cit., n. 14, and "Debate within vs.

34 There is a valuable discussion of the need to analyze reforms of administrative decision
making in these terms in Sabatier, "Regulatory Policy-Making: Toward a Framework of

35 The Philippines are a notable exception to this statement. A National Environmental
Protection Council was created by Presidential Decree 1121 on April 18, 1977, and a
Philippine Environmental Policy declared by Presidential Decree 1151 on June 6, 1977.
This latter has been followed by the issuance of detailed guidelines for implementation
of the environmental impact assessment system established in Section 4 of the decree
and placed under the supervision of the Council. The language of the policy decree is
highly imitative of NEPA, and the guidelines borrow heavily from both American and
Canadian precedents. I am grateful to the Librarian of the International Council of
Environmental Law in Bonn for making available copies of the decrees and the guide-
lines.

In Malaysia the EIA process recommended by an ad hoc panel appointed by the
Director General of Environmental Quality in March 1977 follows Canadian experience
very closely. In Papua New Guinea the 1978 Environmental Planning Bill draws on
Australian Precedents to some extent. In other countries acts creating EIA processes are
so brief that it is difficult to tell whether they try to build on prior experience. This is
the case, for example, with Titile VI of the Colombian National Code of Renewable
Natural Resources and Environmental Protection enacted in December 1974.

36 The Presidential Reorganization Plan creating the United States Environmental
Protection Agency was submitted to Congress after enactment of NEPA. See Council
on Environmental Quality, Environmental Quality, First Annual Report (Washington,
1970), ch. 2 and apps. H-J.
This approach, which has been especially evident in Europe, is sharply criticized by Prieur and Lambrechts, op. cit., n. 63.

Prieur and Lambrechts refer to the 1975 principles as a stop-gap measure and argue that it would be wrong to expect them to be widely applied. Id., at 21. See also: Kennedy, "Wo steht die Umweltverträglichkeitsprüfung?" Umwelt 6/1978, 402-406; Kennedy, "Environmental Impact Assessment in the Federal Republic of Germany", Paper for the Working Meeting on Projects, Policies and Environmental Impact Assessment (Berlin, May 1978). Further references to papers prepared for this meeting, which was organized by the International Institute for Environmental and Society with the support of the German Marshall Fund of the United States, will be made as Paper for Berlin Working Meeting (May 1978). Copies of papers cited may be obtained from IIES at Potsdamer Strasse 58, D-1000 Berlin 30.

It should be noted that the Umweltbundesamt, the West German environmental protection agency, maintains an interest in and is a quiet advocate of improved EIA procedures. The position that existing laws and regulations for environmental protection lead to sufficient consideration of environmental impacts is so firmly held by other West German agencies, however, that the principal impetus for change may come from attempts being made to institute EIA at the level of the European Community.


Id., at 4566; Formby, op. cit., n. 39, p. 7.

Id., at 3-4.

These concerns were articulated at some length by opposition spokesmen during the debate on the Australian law. Commonwealth of Australia, 1974 Parl. Debs. Reps., 4560-4562.


In addition to the Environment Council, these advisory bodies include the New Zealand Planning Council, the New Zealand Commission on the Future, and the Royal Commission on Nuclear Power Generation in New Zealand. Since 1976, the Annual Report of the Commission for the Environment has included a report by the Chairman of the Environment Council.


The work of the Environment Commission and the Environment Council in developing support from the environmental movement in New Zealand is a notable example of this. Commission for the Environment, Annual Report (1977), op. cit., n. 47, p. 11.
These difficulties are illustrated in the Commission’s attempt to integrate EIA with established procedures for town and country planning and for water rights in connection with the Auckland Thermal I Power Station and the Waiau Plains irrigation scheme. In the latter case, the Commission was subject to a subpoena by one of the appellants against a Crown water right. At the appeal hearing the environmental impact report on the scheme and the Commission’s audit of the report were ruled inadmissible as legal evidence. Commission for the Environment, Annual Report (1977), id. at p. 10. Despite its lack of legal status, the Commission has resisted the introduction of legislation on EIA in New Zealand. I am grateful to officials of the Commission for their exchanges with me on this and other subjects.


Emond, op. cit., n. 8, pp. 21 6-223 and 227-229.


Commission for the Environment, Circular ENV 8/Oa, op. cit., n. 46, 3-5.


On Febr. 27, 1978, the Government announced that the Department of the Environment was to have primary responsibility for all environmental matters in Ireland. It also announced the formation of an Environment Council to advise the Minister. See: Statement, “Ministerial Responsibility for Environmental Matters”, (Government Information Services, Dublin, Febr. 27, 1978). More generally, see: Y. Scannell, The Law and Practice Relating to Pollution Control in Ireland (London, 1976).


See e.g. the critical observations in: Falque, “L’Etude d’impact d’une Centrale Nucléaire”, (Godard, Falque et Associés, Aix-en-Provence, 1978), Examples of the approaches being taken to the practice of EIA in France can be found in: Electricité de France, Poste de Transformation de Belle de Mai: Etude d’impact sur l’Environnement (Marseille, May 1978) and Electricité de France, Chute de Moustiers Ste. Marie: Impact sur l’Environnement (Marseille, n.d.). Prieur and Lambrechts, op. cit., n. 6, at 8 and 10, estimate that between 7,000 and 10,000 impact studies will be prepared each year in France at an approximate cost for each one of 0.25 per cent to 0.75 per cent of the cost of the investment or one to ten per cent of the cost of all preliminary studies.


prepared by the Project Appraisal for Development Control Research Team at the University of Aberdeen.


65 The commitment is reported in Department of the Environment Press Notice 488 (Sept. 13, 1978). The Secretary of State for the Environment indicated that he and his colleagues had been considering the recommendations made in DoE Research Report No. 11 (see n. 63 above) and stated that "We fully endorse the desirability ... of ensuring careful evaluation of the possible effects of large developments on the environment ... though we must not forget the unacceptable delays and costs of some environmental assessment procedures used in other countries, nor the strong interest we have as a nation in the success of our industrial strategy... The approach suggested (in the Report) is already being adopted with many... public and private projects. We should therefore wish to encourage use of this approach in cases where its use is worthwhile in the circumstances, relevant to the decision, and necessary to the total evaluation of the project ...".

66 Environmental impact assessment in the Netherlands is the subject of a special issue of the journal Tijdschrift voor Milieu en Recht, scheduled for publication in April 1979. More generally, see: Wandesforde-Smith, op. cit., n. 56, 53-56, and the literature cited therein.


68 The nature of the Commission’s environmental policy and of the political and administrative constraints that shape it is discussed in Bungarten, Umweltpolitik in Westeuropa (Bonn, 1978).

69 Prieur and Lambrechts, op. cit., n. 6, 84-85.

70 Id., at 63. The specific feature of the French law Prieur and Lambrechts have in mind is discussed as follows: "Article 2 of the French Act of 10 July 1976 on Nature Conservation makes a timid move (in the direction of developing the practice of suspensive appeals of administrative decisions or granting stays of execution on a generous basis). The absence of an impact statement, established under an urgent procedure, automatically suspends the enforcement of the disputed decision. The court generally has discretion to order suspension, but the circumstances in which it may do so seem too limited. Why need it be shown that the consequences of enforcing a decision are likely to be ‘irreparable’? It would suffice to define the suspension criteria more flexibly. It would be within the court’s power to do this, but the legislature should provide the incentive". Id., at 85.

The first attempt to follow the French model has occurred in neighbouring Luxembourg (id., at 14), although there are some differences between the French Nature Protection Act of 1976 and the Luxembourg Nature Protection Act of 1978.
Guiding Principles for an Impact Procedure

The Council,

Considering that modifications effected by man on the quality of the environment and thoughtless uses of natural resources are generally irreversible;

Considering that in the elaboration of programs or projects, environmental objectives must be considered on a par with economic and social objectives;

Considering that the ecological consequences can be truly evaluated only with the effective participation of concerned citizens; and

Considering that the very fact of anticipating and analysing the possible consequences for the quality of the environment, of decisions and actions envisaged by public authorities and private enterprises, can contribute to the realization of environmental objectives and can guarantee the transparency of the decision-making process;

Considering that national or international regulations relating to the protection of the environment should include at least a certain number of rules ensuring the evaluation of possible consequences of certain projects on the quality of the environment;

Recommends that the following principles be observed:

1. All land use and public works programs and projects which could lower the quality of the natural or the man-made environment, by reason of their dimensions or their primary and secondary effects, should be preceded by an environmental impact assessment permitting an evaluation of their consequences.

2. Each national legislature must determine the list of plans, works and projects submitted to the environmental impact assessment procedure.

3. Each national legislature must also determine the list of plans, works and projects which need not be submitted to an environmental impact assessment procedure.

4. An independent body designated by the national legislature must decide in each specific instance whether, in application of principle no. 1 above, an impact assessment must be prepared concerning a plan, work or project not included in one of the lists specified in 2 and 3 above.
5. The impact assessment must be filed before any procedure for the authorization of the planned program or project is undertaken or, if no such procedure is applicable to the case in point, before the definitive adoption of the project or program.

6. The national legislature must determine the respective rights and duties, on the one hand, of the author of the land use or public works program or project and, on the other hand, of the competent authorities for granting authorization or approval. It may prescribe that experts or independent organs be charged with the preparation of the impact assessment in whole or in part, possibly at the expense of the author of the program or project.

7. The impact assessment must include:
   a) an analysis of the original state of the environment which might be impacted by the program or project;
   b) a summary description of the project, possibly including quantitative details;
   c) an explanation of the reasons underlying the choice of the site;
   d) the foreseeable effects of the project or program on the quality of environment, including in particular the indirect effects, long-term effects and temporary effects;
   e) a description of planned measures to reduce, compensate or eliminate unfavourable effects on the quality of the environment;
   f) proposals concerning control measures which need to be taken by the author of the project;
   g) a description of alternative solutions to the proposed project or program, or to certain elements of it, or to the planned site, including the alternative of maintaining the status quo, the analysis of the foreseeable effects on the quality of the environment being obligatory in each case;
   h) a brief résumé of the impact assessment capable of being easily understood by a layperson.

8. Public authorities may specify, if they consider it useful, the information needed to implement specific principle 7 above for the different categories of works or projects submitted to the impact assessment.

9. Before initiating the public consultation foreseen in principles 10-12, the authorities charged with the examination of the impact assessment must be able to obtain, if necessary, information from the author of the project permitting the best possible evaluation of the proposed program or project.

10. The impact assessment must be made available to the public so as to permit members of the public to inform themselves in time to present written
objections and/or oral comments in the context of public hearings. The author of the project must respond to objections and observations which are presented.

11. The public authorities concerned must also be consulted by an appropriate time concerning the impact assessment.

12. After the consultation process is completed, the responsible agency must make its decision by considering the impact assessment, the information and answers provided by the author of the project, the objections and comments of the public, the minutes of the public hearing, if one was held, and advice from any other public authorities and experts consulted.

13. If the examination of the documents enumerated in principle 12 does not permit the competent authority to reach a decision, the preparation of a new impact assessment may be required.

14. Should the examination provided in principle 12 reveal that realization of the program or project would cause serious and irreparable damage to the quality of the environment, such that it could not be eliminated or compensated, the responsible agency must refuse authorization or approval of the project.

15. Should it be possible to eliminate or compensate for the foreseeable negative effects on the quality of the environment, modifications of the program or project, special prescriptions or control measures must be imposed upon the author of the program or project.

16. The decision of the program or project must be made public together with the documents in the file which permit an evaluation of the decision.

17. In cases of non-compliance with the obligation to prepare an impact assessment or in cases of violation of the impact assessment procedure, the national legislature must establish emergency procedures permitting the suspension of the proposed or already initiated program or project until the appeal tribunals can decide on the regularity of the procedure followed.

18. In conformity with the principle of non-discrimination and without prejudice to the international obligations of the State, the impact assessment must give, on an equivalent basis, the repercussions which the program or project may produce on the quality of the environment outside the limits of the State’s territorial competence.
Public Participation in Environmental Decision-Making

by Lothar Gündling

The author wishes to thank Rüdiger Lummert of the International Institute for Environment and Society, Berlin, and Nicholas A. Robinson of Pace University School of Law, White Plains, New York, for numerous suggestions on the subject.

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I. Introduction

Two fundamental principles of the rule of law are the right to be heard and the judicial protection of the citizen against executive power. The first principle requires that everyone who is or may be affected by an act of the executive should have the opportunity, before the act is decided upon, to express his opinion on that act. Although the right to be heard was primarily developed for judicial proceedings, it is also concerned with administrative decision-making. Here, too, the individual should be permitted to be heard concerning a prospective measure of the executive that affects or may affect his rights. The principle of judicial protection against executive power may be looked at as supplementing the right to be heard: it enables the individual to appeal to an independent body for review of all acts of the executive which affect his rights.

With the increased protection of the environment, State activity has gained new dimensions. In this area States have assumed the responsibility to meet dangers and risks which may threaten a great number of citizens or even the general public. The open landscape, the water and the air, have come to be considered as the common property of all, and their rational management is not only in the interest of one single individual but in the interest of all. Therefore, States have increasingly begun to recognize that, in the law of environmental protection, the traditional structures of individual participation and judicial protection of the individual are inadequate, and that the public, interested citizens and organizations ought to have the opportunity to participate in the administrative decision-making process. As a result, the view has emerged that when it is the public in whose interest environmental protection measures are taken, and when it is the public who are expected to accept and comply with those measures, the public should have the chance to develop and articulate its opinion, and to air it during the environmental decision-making process. In some States a further consequence has been to enable the public to supervise and directly enforce environmental laws apart from those provisions merely providing for its participation. While a considerable number of States still hesitate to do this, some States have already provided for citizen suits in environmental affairs.

II. The Notion of Public Participation

To determine the subject and scope of the inquiry, some initial remarks on the notion of public participation may be useful. It is not intended here to describe generally the participation of the citizen in State decision-making nor can it be the objective to deal with all the means citizens possess to influence a State's environmental policy. Thus, this article does not deal with the possibility of the citizen to influence the composition of a parliament by elections and to participate thereby in the legislative process. Excluded also are the indirect influences that citizens can exercise as members of political parties. The subject of this article is the participation of the citizen in administrative procedures as far as they concern the protection of the environment. These procedures may be very different as will be shown later, and may concern licensing, planning, especially land use planning, or even rulemaking, such as the determination of environmental quality standards. The notion of “participation” is used in a broad sense. It includes not only participation in the preparation of an administrative
decision through the right to raise objections or to require a hearing; it also
covers the right of citizens to appeal to courts for review of administrative
measures which affect the environment. Participation in environmental
decision-making and in the judicial review process are inseparably linked. Citizen
suits in environmental matters are a special form and level of citizen parti-
cipation, and at the same time they secure and guarantee citizen participation.6
Finally, "public" participation means the potential participation of every inter-
ested citizen and not only that of those whose individual rights are affected by
an administrative decision. This also includes the participation of groups of
citizens, of associations and organizations, regardless of whether they are special
environmental protection organizations or not. An organization or association of
citizens which primarily has other objectives than the protection of the environ-
ment, but which is also interested in a decent environment, should also be
availed of the opportunity to participate and should not be excluded a priori
from the environmental decision-making process. Effective participation may
overreach the resources of a single citizen, such as his financial capacities and
specialized knowledge, and this provides the reason and justification for involve-
ment of associations and organizations, especially of those whose special ob-
jective is the protection of the environment.

III. The Rationale for Public Participation

1. Informing the administration

Public participation in environmental decision-making serves various purposes.4
The first may be summarized as "providing information for the administration".
Public participation will, above all, increase the available amount of specialized
knowledge on a subject, derived from either the special knowledge of citizens or
from experts engaged by citizens. Also, existing proposals will be criticized, and
alternatives will be drawn up. Public participation is, furthermore, important and
perhaps indispensable to the confronting of the administration with the prob-
lems and consequences raised by an intended action; the administration will
thus be aware of the different interests that may be affected and ought to be
reconciled.5 The additional knowledge and the additional awareness of prob-
lems, introduced into the decision-making process by public participation, may
increase the quality of the decision, and thus public participation may increase
the quality of the measures taken by the State and its agencies to protect the
environment.5

2. Increasing the readiness of the public to accept decisions

A second purpose that public participation serves is to increase the readiness of
the public to accept decisions taken by the State.6 A citizen who has had the
opportunity to participate in the decision-making process, and who is not con-
fronted by the administration with a fait accompli, will tend to show a greater
willingness to accept and accommodate a decision. On the other hand, and this is
the more important point, public participation in the decision-making process
can reduce much of the potential for conflict that would otherwise exist, pro-
vided that public participation has been timely and effective. The administration
will then have been confronted with the different interests, and will have been
able to take them into account. It is clear, however, that a decision can never satisfy all interests, all groups, or all citizens; nevertheless, the readiness of the public to accept administrative decisions can be increased.

3. Supplementing judicial protection

Another function of public participation may be found in the strengthening of judicial protection. There may be cases in which judicial review results in a declaration that an administrative action has been unlawful, but can be too late to have any real effect. In practice, decisions on specific projects like the licensing of large-scale industrial structures or nuclear power plants can often be executed immediately, whether or not law suits have been brought against the decision. Plaintiffs and courts may thus be presented with *faits accomplis* which can hardly be revoked. Participation already provided for in the decision-making process guarantees that objections against an action can be raised before the action is taken, and before any expenditures are made. The final decision can take into account the objections raised during the decision-making process so that, in many cases at least, there will be no need for recourse to judicial procedures.

There are further reasons indicating that judicial review of administrative actions alone is not a sufficient protection for the public interest and that it must be supplemented by earlier public participation in the decision-making process. When a dispute reaches the courts, it concentrates on a certain and specific action, leaving no room to suggest and consider alternatives to it. In the process of decision-making, however, alternatives can be and are discussed, at least until a certain stage of the process. Another reason is that for certain types of administrative action, for instance the licensing of polluting structures or activities, the law may exclude further civil actions after a certain period of time has elapsed. If a decision has such far-reaching consequences, it is desirable that everyone who may be affected by the decision should be informed and have the opportunity to raise objections before the decision is taken.

4. Democratizing decision-making

Public participation can be said to be a necessary inference from currently accepted democratic principles, for democracy is understood to be that type of government of a society which enables the citizens thereof to participate in the State's decision-making processes as fully as possible. This view, however, is not universally accepted. There exists, for instance, the opposing view that "participation" has nothing to do with "democratizing" and that "democratizing" is merely a slogan lacking any jurisprudential meaning. Others argue that in representative systems of government the right to the exercise of power rests with the representatives elected by the people; consequently, there is no necessity for any further forms of public participation, because these representatives would already act in the public interest. It is further argued that, in representative systems, public participation in administrative decision-making would lead to a problem of democratic legitimacy, because individual citizens, groups of citizens or organizations participating in decision-making processes would not have been elected or appointed in a democratic manner.
These criticisms may be answered, firstly, by observing that representative democracy is one type of democracy, not the only one. Secondly, a representative system does not necessarily exclude every element of direct democracy; the truth of this can be illustrated by all representative systems in which one finds elements of a more or less direct democratic involvement. Lastly, it should be noted that it is not the citizen, the group of citizens, or the organization who actually take the decisions; they only participate in the preparatory stages of the making of the decisions. The monopoly of the State and its agencies of the power to decide is not called into question by the participation of the public; there is no ground for the fear that the power of the State will be dissolved by the advent of public participation. Public participation, however, can be seen to help the State and its agencies to fulfill their duties in a more acceptable and effective way.

IV. Public Participation in Administrative Procedures

1. The different types of administrative procedures

a. Environmental impact assessment

The first and perhaps most important category of administrative procedures is that of the special "environmental impact assessments" which are provided for in federal and state legislation of the U.S.A., but also in the federal legislation of Australia and, to some extent, in that of France and New Zealand also. The National Environmental Policy Act (NEPA) 1970 of the U.S.A. requires a special environmental impact assessment to be carried out concerning any recommendation or report on proposals for legislation and for any other major federal actions which might significantly affect the quality of the environment. The assessment of environmental impact which is provided for in the federal legislation of Australia is also of a general nature and not limited to a specific field of environmental protection; the legislation closely follows the NEPA model and its requirements for impact assessment and the preparation of statements thereon. France has made provision for a special assessment of environmental impact in the field of nature protection. Article 2 of the French Nature Protection Law of 1976 prescribes special "impact studies" ("études d'impact") for all measures seriously affecting the environment. New Zealand, which also provides a system for a special assessment of environmental impact, is in a class of its own as these procedures have had no legislative basis to date — thus they cannot be enforced in a court of law.

b. Licensing procedures and planning

Administrative procedures with an environmental bearing include all those systems where decisions in which the protection of the environment is the primary aspect, or at least one among others, involved in the decision that is to be taken. This is true, above all, for the licensing procedures for industrial structures or activities that may cause damage to the environment. Such procedures exist, for example, in the legislation of the Federal Republic of Germany, for instance in the Federal Immission Control Act 1974, the Atomic Energy Act as amended in 1976 and the Federal Water Supply Act as amended in 1976.
1976, but of course also under the legislation of other States too. These licensing procedures are complex and almost comparable with planning procedures which constitute the other type of procedure that is to be considered here. Planning which serves environmental protection objectives is mainly land use planning together with its different branches such as urban planning, local project planning and regional development planning. Besides this category there are a number of special planning procedures in which aspects of environmental protection are to be considered, among other criteria, for example, in the planning of highways, airports, waste disposal plants and storage facilities for irradiated nuclear fuel.

c. Rulemaking

Another type of procedure that should be mentioned here is the procedure for the preparation of rules and regulations issued by the administration. These procedures may be of particular concern to those interested in the protection of the environment because they lay down environmental quality standards. Therefore, legislation in some States provides for formal procedures to involve the public in the preparation of administrative rules and regulations.

2. Informing the public

a. Survey of the public’s right to information in the different decision-making procedures

The proper informing of the public is the most important prerequisite for its participation in environmental decision-making. Information should reach citizens who are or may be affected by a proposed action of the administration and the information, furthermore, should be given in time, and be comprehensive and comprehensible.

Whether or not the public is informed and to what extent depends on the characteristics of the different decision-making procedures. The special environmental impact assessment instituted by some States to cover major administrative actions, and in particular for those which could seriously affect the environment, regularly provide for the information of the public. The environmental impact statement, required by the NEPA 1970 of the U.S.A. for proposals for legislation and other major federal actions significantly affecting the quality of the human environment, is made available by law to all interested public and private organizations and individuals. The guidelines for the carrying out of the NEPA provide that federal agencies should announce the availability of draft environmental impact statements and should make copies available to organizations and individuals who request an opportunity to make comments. It is further provided that agencies should devise methods for advertising the existence of draft statements. One example of how this is done is by the publication of notices in local newspapers. Another is by maintaining a list of groups, including relevant conservation organizations known to be interested in the agencies’ activities, and directly notifying such groups of the existence of a draft statement, or sending them a copy, as soon as it has been prepared.
The environmental impact assessment procedures laid down in the French Nature Protection Law 1976 also includes provisions for the information and participation of the public. It is provided that "impact studies" (études d'impact), if not published in public hearings, are to be made available to the public in other ways. For this purpose, agencies are required to announce the existence of an impact study in at least two local newspapers; for operations of national importance, the setting up of the impact study must, in addition, be announced in at least two newspapers with a national distribution.

Similar provisions concerning the information of the public exist in Australian legislation and in the regulations (without legal effect) of New Zealand.

Licensing procedures generally include information of the public and their participation when they are formal and complex ones like the procedures for licensing nuclear power plants or major air-polluting industrial structures. Simpler licensing procedures often take place without any public participation, for example, procedures concerning projects involving activities which have a minor environmental impact. In the licensing procedures provided for in the Atomic Energy Act as amended in 1976 and in the Federal Immission Control Act 1974 of the Federal Republic of Germany, for instance, the licensing agency is obliged to announce a proposed project in its official gazette and in local newspapers. It is further prescribed that the licensing agency is required to make public, for a period of two months, the application and a short description of the project and, in the case of a nuclear power plant, also the safety report.

Comparable provisions can be found in the atomic energy legislation of other States, for instance in that of Switzerland and the U.S.A. The Swiss example is of some interest. Following the 1979 revision of the Swiss Federal Atomic Energy Act, all nuclear power plants need a general licence ("Rahmenbewilligung") of the Federal Government; this licence must in addition be approved by the Federal Parliament (Bundesversammlung). The Federal Government is obliged to announce every licence application in the Federal Gazette and to make the documents available to the public "in an appropriate manner." In addition to the application and the accompanying documents, the Federal Government is under an obligation to publish the conclusions from statements and advisory opinions that are required to be made by cantonal and federal agencies and from experts. Any citizen may raise objections to the application, but also to the conclusions of the statements and advisory opinions. In the U.S.A., the licensing of nuclear power plants as prescribed in the Atomic Energy Act 1954 also constitutes an action which requires an environmental impact statement. Thus the public should also be kept informed under the provision concerning the preparation of environmental impact statements.

Planning procedures generally provide for public information where they concern local land use planning, in particular urban planning and local project planning. The information of the public is also usually required in special planning procedures like those for highways and airports. Informing the public is often more restricted in procedures relating to regional land use and development planning. Far-reaching rights to information, however, exist in local project planning. The German Federal Building Act as amended in 1976, for example, provides that local authorities are obligated to explain to the public...
the objectives and purposes of planning in general, and that they must give everyone the possibility to comment on them\(^8\); further, such information is to be provided to the public as early as possible and should show all the known impacts that a type of plan covered by this legislation might have, as well as those of the alternatives to the proposed plan\(^9\). It is further provided that the draft plans are to be made public for a period of one month, and that local authorities shall announce the public exposition of the draft plans, indicating that anyone may raise objections\(^6\).

In special planning procedures (i.e. for projects such as highways and airports), national legislation frequently requires that the project plans be made public in all the municipalities which may be potentially affected by the project and that public exposition shall be announced according to local usage\(^6\).

Some States also provide for the public's information and participation in regional planning procedures, but only in certain areas concerned with environmental protection. The Nature Protection Act 1976 of the Federal Republic of Germany\(^6\), for instance, enables "recognized associations" (associations concerned with the pursuit of environmental protection objectives and which are expressly recognized by the State) to participate in the preparation of programmes and plans\(^5\); the Swiss Federal Act on Nature Protection 1986 provides for the participation of conservation organizations, but only for those who act on the federal level\(^6\).

In rulemaking procedures which fix environmental quality standards, information of the public is required, for example, in the legislation of both the U.S.A. and the Federal Republic of Germany. As far as procedures which involve actions requiring environmental impact statements are concerned, the public is to be kept informed under the provisions of the NEPA 1970 or the environmental protection laws of individual states. The U.S.A.'s Clean Air Act as amended in 1970 and Federal Water Pollution Control Act as amended in 1972 also provide for public information: agencies are required to publish proposed regulations, standards, etc., indicating when public hearings are to take place\(^5\).

In the Federal Republic of Germany a form of public participation is provided for in the Federal Immission Control Act 1974, which requires in some provisions that before regulations implementing the objectives of the Act are issued, "interested groups" ("beteiligte Kreise") are to be heard first\(^5\). "Interested groups" are defined as consisting of representatives from the scientific community, affected persons, interested industries and relevant State authorities\(^7\). The Act does not, however, contain an explanation of how this participation is to be achieved. Another example of public participation in rulemaking procedures, even though of a restricted variety, may be seen in the participation of "recognized associations" according to the Federal Nature Protection Act 1976, who are also enabled to participate in the preparation of regulations\(^8\).
b. Problems connected with informing the public

aa. Ensuring receipt of information

One can only speak of the information of the "public" when the information is readily available to everyone who is or may be affected by a proposed action of the administration. In principle it cannot be sufficient merely to inform certain individuals and certain groups who are more or less representative of the public. To meet this problem national legislatures have introduced measures requiring the appropriate agencies to announce proposed actions in their official gazettes and/or through the mass media information sources like local, regional, or national newspapers, according to the scale of the action involved. For the same reason these agencies are required to expose for a certain period of time documents, such as descriptions and applications and, to a certain extent, reports, studies and advisory opinions, the display of such documents taking place at local centres open to the public. In the U.S.A., the custom has developed that, in addition to public announcements, agencies should maintain a list of interested citizens, groups or conservation organizations and to notify these interested parties of the proposed action.

Information of the public is restricted if only certain groups or associations are informed. Notable in this respect is the giving of information to only a limited section of the public such as the "recognized associations" under the system obtaining in the German Federal Nature Protection Act 1976 or again in the example of the participation of "interested groups" provided for in the German Federal Immission Control Act 1974.

bb. Transfrontier information

A problem of crucial importance is raised by the phenomenon of transfrontier pollution. Polluting structures or activities in border areas may affect the citizens of one or more States. Starting with the premise that information should reach all individuals, groups and organizations who are or may be affected by an action, one would then expect that in cases of transfrontier pollution requirements for informing the public and public participation in the appropriate administrative procedures should also cross national borders, if the word "public" is taken in this broader sense. In practice, however, these developments have sadly not come about, and indeed, the idea of transfrontier information and participation has met with a number of political and practical obstacles. Nevertheless, there have been some encouraging initiatives in this direction. In preparing an environmental impact statement, federal agencies of the U.S.A. have also to consider the impact of proposed federal actions on the environment beyond the national borders of the U.S.A., that is, the impact on the environment of foreign nations, on the high seas, or on territories which are not under any national jurisdiction, like Antarctica. For this purpose, it is provided that the Department of State, the Council on Environmental Quality and other federal agencies are to conduct a programme for the transmission, on a continuing basis, of data concerning the state of the environment; furthermore, certain federal agencies are charged with the duty to set up appropriate procedures for determining how and when an affected nation should be informed of the effect of a proposal action.
A second attempt to secure the passing of information across frontiers has been made in an international treaty. The treaty of 1974 on the protection of the environment concluded between Denmark, Finland, Norway and Sweden\textsuperscript{75}, provides that “if the court or the administrative authorities examining the permissibility of environmentally harmful activities find that the activities entail or may entail nuisance of significance in another Contracting State, the examining authorities shall, if proclamation or publication is required in cases of that nature, send as soon as possible a copy of the documents of the case to the supervisory authority of the other State, and afford it the opportunity of giving its opinion”\textsuperscript{76}. It is further provided that “the supervisory authority, if it finds it necessary on account of public or private interests, shall publish communications from the examining authority in the local newspaper or in some other suitable manner”\textsuperscript{77}.

c. Timely information

Effective public participation requires early and accurate information. Information ought to be given during that stage of decision-making when binding decisions have not yet been taken and alternatives can still be considered. Providing information as early as possible is one of the objectives pursued in the legislation of the U.S.A. Draft environmental impact statements should be made available as early as possible. “In particular, agencies should keep in mind that such statements are to serve as the means of assessing the environmental impact of proposed agency actions, rather than as a justification for decisions already made. This means that draft statements on administrative actions should be prepared and circulated for comment prior to the first significant point of decision in the agency review process”\textsuperscript{78}. In the French legislation relating to environmental impact assessment, as well as in the legislation of the Federal Republic of Germany, one finds an absence of a similar endeavour to inform, and to obtain the participation of, the public as early as possible. According to the relevant French legislation, one is unable to exclude the possibility that the information will only reach the public when the decision has already been taken\textsuperscript{79}. In the licensing procedures provided for in the German Federal Immission Control Act 1974 and the Atomic Energy Act as amended in 1976, the informing of the public takes place once the application has been filed\textsuperscript{80}; however, at this stage in events, projects, in particular those concerning major structures, will have often already been effectively decided upon and there will only be little room for the consideration of alternatives. If this is the case, it is clear that the participation of the public will have been restricted to a severe degree. In cases concerning major structures like power plants or other industrial structures, the main decisions are generally taken during the negotiations between the relevant agency and the applicant held prior to the filing of an application; but these negotiations take place without any participation of the public.

d. Comprehensive information

As to the content of the information given to the public, the legislation of States varies considerably. The most far-reaching regulations from the point of view of public participation are again to be found in the legislation of the U.S.A. Draft impact statements that are to be made available to the public should fulfill and satisfy, to the fullest extent possible at the time that the draft is prepared, the
requirements laid down for final statements81. As a consequence, draft impact statements should already consider the anticipated potential impact of the proposed action and that of the known alternatives to the proposed action82. In the licensing procedures provided for in German legislation, however, only the application and those documents which indicate the potential impact of the proposed plan on the environment are available for the public83. Thus, only those documents prepared and selected by the applicant himself are open for the public's view. Access to information may be further restricted by the fact that, in the Federal Republic of Germany, agencies are not obliged to make available to the public all documents relating to a special case; the decision as to the types of documents to be made public lies in their discretion84. Further limits on public information are set by the general law protecting private secrets, in particular industrial secrets. It must be said, however, that documents containing such secrets must not simply be withheld from the public; the documents should instead be substituted by descriptions indicating the impact of the project on the environment85.

ee. Comprehensible information

The information given to the citizen needs to be comprehensible to him — otherwise it is useless. Environmental decision-making, however, often concerns highly complicated scientific and technical factual material. There are even cases in which the issues produce great controversy among experts. To illustrate this it suffices to mention the example of nuclear power plants, the safety of which will continue to be a controversial issue among scientists. The objective that information should be comprehensible for the citizen, is therefore of special importance in environmental decision-making. States are generally aware of this need. In the legislation of the U.S.A., for example, it is recommended that environmental impact statements should be drafted in an easily understandable form, paying attention to the substance of the information to be conveyed rather than to the observance of a particular form, length, or strict adherence to detail in a statement86. Comparable provisions can be found in the laws of the Federal Republic of Germany concerning licensing procedures. Applicants are obliged to submit short descriptions of their projects that are appropriate for the public and which indicate in a comprehensible manner the potential impact of their projects on the environment87.

3. Hearing the public

a. Survey of the public's right to be heard in different decision-making procedures

Fundamental elements of participation in this context are the right to be heard and the right to raise objections. It is generally considered to be desirable that the public should be granted these rights in all those decision-making procedures in which major acts or projects are to be considered which may seriously affect the natural environment.

In the environmental impact assessment procedures provided for in the legislation of the U.S.A., the public not only has the right to comment in oral or written form, but is often given the opportunity to participate in public
hearings. The guidelines for the implementing of the NEPA, for example, provide that federal agencies, when preparing environmental impact statements, should hold public hearings whenever it is appropriate to do so. In deciding whether a public hearing is appropriate, agencies should consider, amongst other things, the magnitude of what is proposed, the degree of public interest in the proposals, the complexity of the issues involved, and the likelihood of information being presented at the hearing which will be of assistance to the agency in fulfilling its responsibilities. In France, public hearings appear to be the exception rather than the rule. In some but not all cases, a form of public inquiry takes place ("enquête publique") during which everyone is given the opportunity to raise objections in oral or written form; a commissioner then compiles the objections and prepares a report for the "prêt" who is responsible for the project or action in question.

In complex licensing procedures in the Federal Republic of Germany the law accords everyone the right to raise objections. The objections must be submitted in written form, but it suffices if the objections are recorded in an official report, which must be drawn up in the offices of the licensing authority or at the local centre where the documents are exposed. The authorities are then obliged to discuss the objections with objectors, but these discussions are closed to the public. The licensing authority decides who else, apart from objectors, may also be allowed to participate in the proceedings. Comparable provisions exist in Switzerland and, in particular, in the procedures for licensing nuclear power plants. Under those procedures, any member of the public can raise objections against both a general licence ("Rahmenbewilligung"), and the statements and advisory opinions delivered during the proceedings. But there is no obligation upon the Federal Government - which is responsible for issuing licences - to discuss the objections with objectors.

As previously mentioned, planning procedures, and especially local planning procedures, generally provide for public participation, and in regional and supra-regional planning procedures the scope for the participation of the public is more restricted, although these latter planning procedures may also have considerable effects on the citizen. In the Federal Republic of Germany, any citizen can raise objections against a local planning project, and he can also make proposals. However, such objections or proposals are required to be made during the one month period during which the draft project plans are on public display. In special planning procedures, as are involved in the planning of highways and airports, "anyone whose interests may be affected by the project" is given the right to raise objections.

Public participation in rulemaking procedures has been extensively enacted for in the legislation of the U.S.A. If rulemaking itself constitutes an action requiring an environmental impact statement, agencies are generally urged to hold public hearings. The laws of the Federal Republic of Germany, to a certain extent, also provide for public participation in the process of rulemaking; the Federal Immission Control Act 1974, for example, provides that regulations implementing the provisions of the Act can only be issued once "interested groups" ("beteiligte Kreise") have been heard. It has already been noted that "interested groups" means representatives of the scientific community, interested industries, affected persons and the competent agencies. This
definition leaves some doubts as to exactly who is to be heard in a particular case, and the ministry responsible for issuing the regulations is left with a certain discretion as to whom it should ask for comments. In addition, every ministry also prepares its own rules of procedure in this regard. Another example of an enactment providing for public participation in rulemaking procedures may be found in the German Federal Nature Protection Act 1976, which enables “recognized associations” to participate in the preparation of programmes, plans, and regulations.

b. Problems connected with hearing the public

aa. Entitlement to raise objections

The short survey above has revealed that the class of persons, groups and organizations entitled to raise objections varies both between the different procedures applicable and between countries. In the U.S.A. one can observe an endeavour being made to provide for public participation to the fullest extent possible; this is the reason for utilizing the system of public hearings whenever it is possible and appropriate. At this juncture, it is opportune to consider some of the principal differences between the laws of the U.S.A. and the Federal Republic of Germany as examples of varying approaches to the same issues in different States. Although at major licensing proceedings and local planning proceedings anyone may raise objections and make suggestions in the Federal Republic of Germany, public hearings are not the usual case; agencies are only obliged to discuss objections with the objectors in meetings which are closed to the public. Public participation is also restricted as has been seen, in the areas of nature protection and rulemaking under the Federal Immission Control Act 1974.

bb. Periods for raising objections

Sufficient periods for the public to discuss and reflect on a proposal of an administrative body are an essential prerequisite for effective public participation. In order that their participation may be “effective”, citizens need to be given sufficient time to obtain the necessary information and to articulate and submit their objections. In environmental decision-making, sufficient periods for evaluation are of special importance because facts are often highly complicated and controversial. Thus citizens also need time to consult experts when they are unable to cope with complex technical material. Here too, it should be observed that considerable differences exist between different States. In the U.S.A., the procedures concerning the preparation of environmental impact statements contained in the NEPA 1970 specify that no action is to be taken sooner than 90 days from when a draft environmental statement has first been circulated for comment; it is further stipulated that no action should be taken within 30 days from the date when the final text of a statement, together with comments, has been made available to the public. Comparable periods are provided for in the legislation of Switzerland; this provides that objections to the granting of licences for constructing nuclear power plants can be made within 90 days after the licence application has been published. In the Federal Republic of Germany periods are shorter. In the licensing procedures established by the Federal Immission Control Act 1974 and the Atomic Energy Act as amended...
1976, objections are to be made during the time during which the documents are exposed to the public, and this period of time amounts to two months. In other planning procedures periods are even shorter and often extend to only one month. As far as licensing procedures for nuclear power plants are concerned, which may involve very complicated issues, it has been said that the period of two months is far too short a period to enable citizens to provide and familiarize themselves with the necessary information and specialized knowledge.

c. Duty of agencies to take objections into account

As is to be expected, no legislation exists according to which agencies are bound by the objections or proposals raised by citizens. Nevertheless, different legislatures have enacted that objections are to be considered and are to be taken into account when the agencies come to make their final decisions. In the U.S.A., for example, it is often laid down that agencies in preparing the final impact statement are obliged to evaluate the proposed action in the light of the views received during the public consultation process and they should also make reference to any opposing view which was not discussed adequately in the draft statement. It is further provided that the substance of all comments received on a draft statement should be attached to the final statement, regardless of whether or not such comments are thought to merit individual discussion by the agency concerned, in the text of the final statement itself. In the Federal Republic of Germany, the relevant agencies are obliged to discuss objections in special hearings with the objectors, giving the latter the opportunity to explain their objections. The terms of the final decision of an agency must contain a section indicating the response to the objections.

V. Citizen Suits to Protect the Environment

Citizen participation in the environmental decision-making process will in many cases help and motivate State agencies to fulfil their given duties in the area of the protection of the environment. On the other hand, there is also a need for a guarantee that the appropriate agencies really do take into account in their final decisions useful suggestions and justified objections which are introduced by citizens into the decision-making process. This guarantee can be provided when decisions of the administration are open to judicial review. The judicial review of administrative decisions in the area of environmental protection, however, is limited under the traditional concept of judicial protection to the objective of the protection of the rights of individuals rather than the protection of the public interest. According to this doctrine, the citizen can only bring an action when he can assert that his legally protected interests are affected. The consequence of this doctrine is that citizens cannot challenge an action which does not affect them as far as their legally protected interests are concerned, but which may nevertheless be objectively unlawful.

It is generally accepted that environmental laws tend to constitute a special category of laws in that their objective is necessarily less concerned with the protection of an individual's rights than with the protection of public interests. Thus, a system which limits juridical standing to bring a law-suit to the defence
of the legally protected interests of individuals will not provide sufficient means to render an effective supervision of the overall execution of environmental laws. Some legislatures have therefore liberalized the requirements of juridical standing in the area of environmental protection, so that a legally protected interest is no longer required, and instead citizens and environmental organizations are granted standing for the defence of public interests. Other States, however, still adhere to the traditional concept of the judicial protection of individual rights and are not yet prepared to grant standing on the basis of the defence of public interests. Nevertheless, in these countries too, the question of liberalizing the requirements of locus standi is under discussion.

1. Citizen suits in the law of the U.S.A.

In the U.S.A. the liberalizing of the requirements of juridical standing has been developed to the furthest extent to date. This liberalization, however, generally took place before the major environmental laws had been enacted and therefore before the courts had been confronted with the first major environmental disputes. Since the beginning of the 1940s, courts — especially in the field of competition law — have decided that the requirement of a legally protected interest was inapplicable to those situations in which statutes had granted standing to persons "adversely affected or aggrieved" by the application of the statutes\textsuperscript{112}. This expansion of locus standi led to further developments; courts then began to grant standing also in cases in which the plaintiff could only assert an "injury in fact"\textsuperscript{113}. A 1965 decision extended this practice to the field of environmental protection, recognizing that environmental interests are also a sufficient basis for seeking judicial review and not merely economic ones\textsuperscript{114}. At this stage, however, standing was only granted to persons whose interests - but not necessarily legal interests - were affected in some way, and it was not considered to be sufficient if a plaintiff asserted pure conservation interests\textsuperscript{115}. On the other hand, standing was granted in cases in which an environmental impact, like air pollution, affected not only a certain group of persons, but the whole population\textsuperscript{116}.

Recent legislation on both the federal and state level expressly provides for citizen suits in environmental matters. The Clean Air Amendments of 1970\textsuperscript{117}, the Federal Water Pollution Act Amendment of 1972\textsuperscript{118} and the Noise Control Act of 1972\textsuperscript{119} all enact that anyone can bring an action against any other person, including governmental and administrative agencies, asserting that emission standards have been violated. An exception to this pattern on the federal level is the NEPA 1970\textsuperscript{120}, which does not expressly provide for citizen suits. It is recognized, though, that in the absence of a provision on standing in an environmental law, plaintiffs can invoke Section 10 of the Administrative Procedure Act\textsuperscript{121} which grants standing to "any person suffering legal wrong because of any agency action or adversely affected or aggrieved"\textsuperscript{122}. On the state level, citizen suits are expressly provided for in the environmental legislation of California, Connecticut, Florida, Indiana, Maryland, Massachusetts, Michigan, Minnesota, Nevada, New Jersey and South Dakota\textsuperscript{123}. Some pieces of state legislation restrict standing to certain administrative acts, geographical regions, or certain areas of law\textsuperscript{124}. Of special importance in this whole area is the Michigan Environmental Protection Act 1970\textsuperscript{125}, the first Act of a state legislature relating to the environment which provided for an expanded notion.
of "standing". This Act can be considered as the model for the legislation of other states. It went a long way to liberalize existing requirements, and gave every person the right to bring an action against any other person and against any agency when he asserts that a defendant pollutes the environment. Therefore, Michigan's legislation also grants standing to citizens residing outside the state, whilst the legislation of other states, such as that of Minnesota, limits standing to state residents.

As far as the scope of judicial review is concerned, it can be said that courts tend to show restraint when an administrative action falls within an agency's discretion, although a definite effort to set some limits to the exercise of such discretion is observable. In cases where agencies were obliged to prepare environmental impact statements, courts have reviewed both the content of the statement as well as the procedure adopted in preparing the statement. In doing this, courts usually examine whether or not agencies have considered all the relevant facts, whether or not they have considered alternatives to proposed actions, and whether public participation has taken place in a sufficient manner. The recent decision of the U.S. Supreme Court in Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, however, might be considered to indicate a trend towards more judicial restraint in reviewing administrative decisions, at least as far as procedural questions are concerned.

2. Citizen suits and/or suits of environmental organizations in other States

Other States that provide for citizen suits - at least to a certain extent - are France and Switzerland. In France, citizens can bring actions against administrative decisions ("recours pour excès de pouvoir") even if they have no legally protected interests to be affected: injury as a fact has, for some time, been considered as a sufficient basis for standing. Actions may be brought by citizens as well as by organizations and groups. A group or organization can assert the violation of both its own or the public interest. Furthermore, recent environmental legislation expressly provides for the possibility of suits by State-recognized environmental organizations.

Although the legislation of Switzerland has been rather cautious in liberalizing jurisdictional standing, it does deserve mention as to the steps that have been taken. According to the Swiss Federal Nature Protection Act 1966, organizations whose objective is the protection of nature are entitled to bring actions in respect of acts of cantonal and federal agencies. A prerequisite, however, is that such organizations act on the federal level. On the other hand, the Act does not require the organizations to be recognized by the State.

3. Arguments raised against citizen suits

Among the States still adhering to the traditional concept of judicial protection is the Federal Republic of Germany. However, it should be noted that the question of liberalizing standing is also under discussion there, and there have been some first steps towards granting wider jurisdictional standing, by granting recognized organizations such standing in the area of nature protection. Those who urge the institution of citizen suits argue that the concept of individual judicial protection is not an adequate means for securing an element of judicial
control over acts of the administration in environmental matters; and that, moreover, agencies, left to themselves in the area of environmental protection, will tend to implement laws only in an insufficient manner\textsuperscript{136}. On the other hand, strong objections have been raised against this view arguing that citizen suits would be incompatible with the traditional system and concept of judicial protection\textsuperscript{137}. Despite the objections to be found in legal literature as well as in the attitudes evident in political practice, the Land of Bremen has recently provided for suits of recognized organizations in matters of nature protection\textsuperscript{138}, and both the Federal Government and the Land of Hessen are preparing amendments to their nature protection laws which also envisage the granting of standing to nature protection organizations.

VI. Final Remarks

The main objection, from the practical point of view, to citizen participation in environmental decision-making and to citizen suits has been that administrative agencies and courts would be overloaded by objections and law-suits and would consequently be unable to fulfill their duties anymore. Also, major and important projects of both a public and private nature would be delayed or even rendered impossible of realization. It should certainly be recognized that major projects, and in particular those with a significant impact on the environment like the construction of a nuclear power plant, often give rise to numerous objections and to numerous actions. In the Federal Republic of Germany licensing proceedings have taken place concerning the construction of nuclear power plants where there have been almost 100,000 objectors. Nevertheless, the experience of isolated major projects should not be taken as the normal case. One cannot say that the administration is in general overloaded and unable to fulfill its functions when the public is granted the right to participate. The same can also be said of the situation of the courts in those States providing for citizen suits. The avalanche of judicial proceedings in environmental matters just did not come, either in the U.S.A.\textsuperscript{139}, or in Switzerland\textsuperscript{140}. 

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Footnotes


2 Cf. infra IV. 1.


5 Lummert/Thiem, op. cit., n. 4, 45.

6 Bender, "Von der Verbandsbeteiligung zur Verbandsklage", in: Verwaltungsrecht zwischen Freiheit, Teilhabe und Bindung, Festgabe aus Anlaß des 25jährigen Bestehens des Bundesverwaltungsgerichts (München, 1978), 37-60 (at 42 et seq.).

7 Lummert/Thiem, op. cit., n. 4, 45; Umweltgutachten 1978, op. cit., n. 1, 463.

8 Mayntz, op. cit., n. 4; Lummert/Thiem, op. cit.


10 In the Federal Republic of Germany the administration usually grants licences for large industrial structures and nuclear power plants that can be immediately executed, so that it has been said that "the existence of faits accomplis is the normal case", cf., Lummert/Thiem, op. cit., n. 4, 43.

11 Lummert/Thiem, op. cit., at 44.


13 Blümel, loc. cit., n. 9.

14 Bender, loc. cit., n. 6, at 47 et seq.


21 The rules of procedure for the preparation of environmental impact Statements are laid down in the Guidelines of the Council on Environmental Quality (CEQ); cf. 40 C.F.R. §§ 1500 et seq. For details cf. Wandesforde-Smith, at page 103-104; Delogu, Die Um-Verträglichkeitserklärung (Beiträge zur Umweltgestaltung A 34) Berlin, 1974;
Bothe/Gündling, Tendenzen des Umweltrechts im internationalen Vergleich (Berlin, 1978), 82 et seq.

22 Cf. Bothe/Gündling, op. cit., at 86.


24 See n. 18.


29 § 9 of the Act (BGBl. 1976, I, 3017) and see also the Water Acts of the Länder.


33 Cf. e.g. §§ 20 et seq. of the Waste Disposal Act of the Federal Republic of Germany (BGBl. 1977, I, 41).

34 Cf. e.g. §§ 9a (3), 9b of the Atomic Energy Act of the Federal Republic of Germany (BGBl. 1976, I, 3053).

35 Cf. the Federal Immission Control Act 1974 of the Federal Republic of Germany; various provisions of which contain formal rulemaking procedures; other examples can be found in the legislation of the U.S.A., for instance in the Clean Air Act 42 U.S.C.A. §§ 7410 (a) (1), 7412 (b) (1) (B), in the Federal Water Pollution Control Act, 33 U.S.C.A. §§ 1312 (b) (1), 1317 (a) (2).

36 See supra IV 1.

37 CEQ, Guidelines, n. 21, §§ 1500 et seq.

38 Id. § 1500:3 (d).

39 Ibid.

40 Decree No. 77-1141 of 12 October 1977, Journal Officiel of 13 October, 4948, arts. 5 and 6.

41 Ibid. art. 6.

42 Kelly, loc. cit., n. 23, 508 et seq.

43 Mills, loc. cit., n. 19, 517 et seq.


§ 4 Rules of Procedure.
48 Collection of Federal Laws 732.0.
49 Decree of 6 October 1978, n. 47, art. 1.
50 Id., art. 5.
51 Id., art. 7.
52 Id., arts. 5 and 7.
54 Lummert/Thiem, op. cit., n. 4, 47.
55 Cf. e.g. for the law of the Federal Republic of Germany §§ 16 et seq. of the Federal Highways Act (BGBl. 1974, I, 2413); §§ 8 et seq. of the Air Traffic Act (BGBl. 1968, 1,1113).
57 BGBl. 1976, I, 2256.
58 § 2a of the Act.
59 Ibid.
60 Ibid.
61 Cf. e.g. § 18 of the German Federal Highways Act (BGBl. 1974, I, 2413) and § 10 (3) of the German Air Traffic Act (BGBl. 1968, I, 1113).
62 BGBl. 1976, I, 3574.
63 § 29 of the Act.
67 § 51 of the Act.
68 § 29 of the Act (BGBl. 1976, I, 3574).
69 CEQ, Guidelines, n. 21, § 1500.9 (d).
70 § 29 of the Act (BGBl. 1976, I, 3574).
71 See n. 66 and 67.
72 See Böth, at page 394, 396.
73 Executive Order 12114 of 4 January 1979, 18 ILM 1979, 154.
74 Ibid.
76 Id., art. 5.
77 Id., art. 7.
78 CEQ, Guidelines, nn. 21, § 1500.7 (a).
81 CEQ, Guidelines, n. 21, § 1500.7 (a).
84 Ibid. - This is another difference from the laws of the U.S.A., cf. Lummert/Thiem, op. cit., n. 4, 56.
85 Cf. § 10 of the German Federal Immission Control Act (BGBl. 1974, I, 721); a similar provision exists in the atomic energy legislation, cf. § 3 Rules of Procedure (BGBl. 1977, I, 280).
86 CEQ, Guidelines, n. 21, § 1500.8 (b).

CEQ, Guidelines, n. 21, § 1500.7 (d).

Cf. Lummert/Thiem, op. cit., n. 4, 59.


An exception may be seen in the participation of the "recognized organizations" according to the German Nature Protection Act (BGBI. 1976, I, 3574) § 29.

§ 2a of the Federal Building Act (BGBI. 1976, I, 2256).

Cf. e.g. Mayer-Tasch, Umweltrecht im Wandel (Opladen, 1978), 36 et seq.


124 Cf. DiMento, ibid.


126 Cf. Bothe/Gündling, op. cit., n. 21, 98.

127 Lummert/Thiem, op. cit., n. 4, 79.


130 Rehbinder et al., op cit., n. 1, 83 et seq.

131 Ibid.

132 Ibid.


135 Rehbinder et al., op. cit., n. 1, 15 et seq.; Rehbinder, "Argumente für die Verbandsklage im Umweltrecht", 9 Zeitschrift für Rechtspolitik 1976, 157-165; Wäde, loc. cit., n. 116; Sening, loc. cit., n. 1; Umweltgutachten 1978, loc. cit., n. 1, 469; Bender, loc. cit., n. 6; Lummert/Thiem, op. cit., n. 4, 87 et seq.

136 Rehbinder et al., ibid.; Ule/Laubinger, op. cit., n. 44, B 13 et seq.

137 Weyreuther, Verwaltungskontrolle durch Verbände? (Düsseldorf, 1975); Ule/Laubinger, op. cit., n. 44, B 99 et seq.


140 Schärer, loc. cit., n. 64, 104.
Land Use Planning in the Light of Environmental Protection

by Professor J.F. Garner

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I. Introduction

Countries in the West, the U.S.A., Japan and many in the East, are faced with increasing concentration of population in urban areas, and everywhere a need is felt to protect the physical environment. Experiences of recent years have persuaded many people that the mechanism of land use controls must be utilized for this purpose. This has become apparent particularly in relation to the following factors:
a) The encroachment on green belts round cities, the degradation and urbanization of the countryside; and the consequent desertion of population from central urban areas;
b) The siting of essential new industry, coal mines, electricity plants and nuclear installations in environmentally attractive areas;
c) The ever increasing demand for motorways and airports;
d) The control and protection of wetlands;
e) The disposal of vast quantities of waste materials;
f) The establishment of second homes (especially in attractive areas, and the problems of tourism; this is particularly acute in Austria and Switzerland where many would-be purchasers of the second homes come from outside the country);
g) The devastation of woodlands and the felling of trees;
h) The destruction of buildings of historic or special architectural value, and of ancient monuments.

These and allied problems are to be found everywhere in Europe and North America; planning machinery used fully and meaningfully could solve most of them, but for economic and political restraints. Population problems, rising inflation, ever increasing demand for higher "standards" of living in a consumer society, all militate in the opposite direction.

The demands of the motor car, the aeroplane and modern industry, continue to increase. The best that the planning machine can do is to endeavour to control and limit the worst ravages these and other factors make of the environment and to endeavour to plan positively for the future. There are thus two aspects to modern land use planning, restrictive and positive.

II. Restrictive Planning

Most countries have some form of land use control by restrictive planning, i.e., controls imposing restrictions on land use whilst leaving ownership and basic enjoyment in private hands.

The United Kingdom, in its separate jurisdictions in England and Wales, Scotland and Northern Ireland respectively, has perhaps the most sweeping legislation, in that a licence ("planning permission") is required for the carrying out of any "development" (with certain minor exceptions), an expression which is defined to include not only the carrying out of building and other operations, but also the making of a material change of use of buildings or land. In granting or withholding a licence the planning authority is required to have regard to the development plan in force for the area, and any other material considerations. The development plan is a statutory document covering a county area, but not a
region, drawn in very general terms specifying areas recommended for development and indicating the approximate siting of all major projects. In the course of preparing the plan the local authority must have regard to the economic planning of the area and available resources, but the quality of the environment is not expressly referred to in the legislation. The plan is therefore often only indirectly concerned with ecological considerations (the area of a national or country park would, for example, be shown) and environmental and ecological matters may, or may not, be taken into account.

Much the same observations can be made about other countries; planning permission has to be obtained before building development is carried out (but not normally a change of use), and it is not common to find a precise requirement in legislation to the effect that environmental considerations are to be taken into account; but this is so when a West German Land is preparing a regional plan.

In Europe, North America and Australia, there is commonly a further control, over the parcelling out of tracts of land (lotissement in France and Belgium, "sub-division control" in U.S.A. and Australia).

When a project of development is submitted, the responsible executive authority will often require the surrender of part of the developer's land for the execution of public works, such as the construction of roads and sewers, and perhaps even for the erection of public buildings or for the creation of public open space. However, developers, in the U.S.A. and in Florida in particular (and more recently in Texas), are well aware of the commercial advantages of reserving substantial open spaces when developing new residential estates. There is rarely any total prohibition on development imposed under lotissement or sub-division control, and the consideration of environmental matters is significant only to a limited extent.

The machinery of control is not always used with the objective of safeguarding the environment. National, regional or local economic pressures may persuade the responsible authority to grant permission for the construction of a hotel or a new industry in a beauty spot; the need to create sources of employment may operate in the same direction. New housing may be considered essential so as to meet the needs of an expanding population, and permission may thus be granted for housing in a green belt or in good farming land. Development has been permitted in some jurisdictions so as to increase the local tax base.

However, there are a few special forms of legal machinery which serve to reinforce the normal controls. Thus, in England and Wales:

a) Applications for permission to carry out development involving a particularly "noxious use" (those uses that are most likely to affect the environment adversely, such as sewage works or high buildings), must first be advertised before being considered by the local authority. This special procedure does not prevent permission being lawfully given for environmentally undesirable development, but at least the authorities are compelled to think carefully before granting permission for development.
b) Applications for permission for substantial development may, either as a consequence of local or national pressures, be taken out of the hands of the local authority, for decision by the Secretary of State for the Environment (the central Government Minister responsible). This means in practice that a local inquiry into the proposal is assured, at which any interested parties, including local or national environmental pressure groups, will be entitled to appear and to make their views known. This procedure is used only in the most important cases, such as a nuclear plant, an oil refinery or some other project of national or regional importance.

c) A local authority may decide to designate as a "conservation area", an area within its district, the amenities of which it considers it desirable to preserve or enhance. Such an area may, for example, consist of a row of Georgian or Victorian houses, the cottages, church or other buildings in a cathedral close; an entire quarter, such as Petty France in Strasbourg or Quartier Carré in New Orleans could be an example. Once a conservation area has been so designated, publicity must be given to any proposal for development that may affect its character. Even this procedure does not prevent an undesirable decision being made, but local or national opinion can be brought to bear to influence the authority in their decision.

In the Netherlands there is a very interesting, but somewhat different device currently used in planning practice. The Cabinet from time to time may define an issue of importance which is of general significance for the national physical planning policy (such as schemes for transport, or electricity supply). Then a special procedure of consultation and citizen participation is followed before the final decision is taken.

These special controls, as in the case with most controls over development, depend on the discretion of the executive authority. There is no guarantee that environmental matters will be taken into account, and once a decision has been made there is little chance in practice of an environmentally harmful consequence being reversed. Exceptionally public opinion may be sufficiently vocal to persuade the authority to change their mind and revoke a decision (where this is legally possible), or there may be some supervisory power given to the central authority to overrule a decision made by a lower authority.

Most countries exercise some measure of special control over historic buildings. France's control over "monuments et sites" (recently amended to emphasize the need to protect buildings) goes back to the early years of the present century. This control often resembles the English pattern, which provides for a listing of specified buildings that may not be altered, extended or demolished without the consent of the local authority. This has in many cases proved a useful control, but in England has tended to fall somewhat into disrepute due to an over-generous use of the listing process. It has a parallel in the United States, where many States have passed statutes enabling local municipalities to declare particular buildings to be immune from demolition or substantial alteration as "landmarks".

Mere listing and protection against demolition is not always sufficient because owners of such buildings may not have the desire or financial resources to keep
them in repair: indeed, it may sometimes be to the owner's financial advantage to allow a listed building to become a ruin, as it will then be difficult for the authorities to refuse demolition and re-development permission. Grants are available from central or local funds in many countries but not in as many cases as are needed. French legislation goes further and requires owners to keep listed buildings in a reasonable state of repair, but this often proves difficult to administer.

Ancient monuments are generally even more strictly protected by separate legislation, and many of them are preserved by being taken into public ownership.

There is also often legislation protecting trees and belts of woodland against wanton felling, usually by the device of a special order made by the executive. When such an order has come into effect in England, no tree in the area may be felled without the consent of the authority, unless it is dead or becomes diseased or dangerous. This control seems to work reasonably well in practice, but it is often expensive in terms of administrative costs.

The display of advertisements also is often the subject of special controls. In England it is possible to declare an attractive area (for example the centre of an historic town) to be a special area for the control of advertisements; it will then not be legally permissible even for the authorities to grant consent to the display of any but the most limited kind of advertisement.

The national parks movement is popular in most countries. The idea was born in the United States, with their wide open spaces of undeveloped country. In the States there are now 32 National Parks owned by the Federal government and managed by the National Parks Service under statutes going back to 1872, with the twin objectives of preserving a remarkable environment and providing a public pleasure ground in the areas so preserved. Large areas, such as Yosemite and Yellowstone, belong to the Federal Government where no development is allowed and these parks are inhabited only by the natural fauna. The Everglades in Florida is somewhat different, being virtually a very extensive open air zoo logical garden. But in all these American Parks control is effective and human beings are admitted only by permission. Here “management” of the environment can be, and is, complete.

In central Europe, the pressures on land use are often too great to permit this “luxury” treatment. The pattern here has been set by England. When a park has been designated, the land is not taken into public ownership, but a special executive body is established, apart from the normal local authorities, with power to restrict development, and to exercise some degree of management. This kind of national park is to be found in many European countries and in the Federal Republic of Germany in particular, where there are 49 “nature parks”, the largest being the “Bayerischer Wald” in Bavaria. In most countries it is national policy to encourage public access to the national parks for the purposes of recreation and exercise. Walking in the English Peak and Lake Districts, climbing and skiing in the Cairngorms in Scotland, sailing, boating and fishing in the Camargue of Southern France, are seen as the principal reasons for designation of a national park; rarely is emphasis put upon the need to preserve the environment or any related ecological considerations. Indeed, the 20 million
population pressing on the Peak District in the English Midlands is having serious adverse effects on the natural flora and fauna; there are many signs of the grass coverage of the moors being destroyed by weekend walkers. Similar consequences have been experienced in the American National Parks: Yellowstone for example has on occasion been closed totally to public access. A recent report of the (U.S.) Conservation Foundation observed "National Parks for Whom? ", emphasizing the conflict between preservation of the environment and enjoyment by the public of that environment. The same is true of the foothills of the European Alps, while effluent from the many motor cruisers on the Norfolk Broads is causing further problems. The designation of areas as national parks cannot always be seen as an effective means of protecting the environment. In more sparsely populated countries such as Sweden and Finland, the designation of areas as national parks is not really of great practical significance.

III. Disadvantages of Restrictive Planning

Even a far-reaching land use control system such as that of Britain does not necessarily adequately protect the environment. In most countries the following defects can be seen:

a) Government development. Property belonging to the State is often not subject to the statutory controls and therefore governments are able to act as they please.

In many countries public activities are undertaken by fully nationalized enterprises also exempted from the normal land use controls, but subject to some measure of central government control.

b) Restrictive nature. Land use controls are in essence negative in effect, and they cannot ensure that some change in land use that would benefit or improve the physical or social environment, will in fact be carried out at the appropriate time. Local authorities may have wide powers of compulsory purchase (expropriation) subject to the approval of the central government and the courts, and these may be used for the purpose of (inter alia) securing the "proper planning" of the area, but such action is rarely inspired by any environmental objective.

c) Goodwill of the executive. This is a real, but unavoidable short-coming of any land use control system. However good a piece of machinery may be, its efficiency in achieving its purpose will depend on the skills and motivation of those operating and maintaining the machine. Although the controls contained in legislation may be tightly drawn, any need to safeguard the environment in a particular instance will be frustrated if the controls are not used with that objective.

Administrative arrangements to ensure that local authorities are aware of potential environmental dangers have been developed in some, but not all jurisdictions. Thus, in England the Secretary of State has advised local authorities to consult with water authorities on all applications for develop-
merit permission that may involve the making of new discharges of effluent to rivers or underground waters. The doctrine of proportionality developed by the French administrative courts requires the executive to take both the advantages and the disadvantages of any scheme of development into account; if a proper balance sheet (bilan) has not been prepared, the eventual decision may be declared illegal by the courts. Our Norwegian correspondent makes the pertinent remark that "it is beyond doubt that environmental considerations are to be taken into account" in planning practice in his country. In a democratic country where decisions are taken by elected bodies, mistakes are probably unavoidable, but there should not be too many of them. There may be power to exercise land use controls draconically in favour of a "good" environment, but the political will may be lacking. The price of a clean environment is, like that of liberty, eternal vigilence.

d) Existing unsatisfactory conditions. Land use controls can rarely do much to cure existing environmental "black spots". Industry that has grown up in a densely populated residential area in the days of "laissez faire", will probably be allowed to remain indefinitely, although the English Planning Acts empower a local authority to take action (at a price by way of having to pay compensation) in such a situation, and in most legal systems compulsory purchase powers are available.

IV. Problems of States Having Rigid Constitutions

States with rigid constitutions have special problems, which are especially highlighted in the United States. It is reasonably clear that any nationalization of the right to develop privately owned land would be regarded in the United States as a "taking" of property without compensation, and therefore unconstitutional and void. Zoning, or prescribing in advance the uses that may be made of specified tracts of land, has been held not to constitute a "taking", provided some element of profitability is left in the hands of the private owner. "Landmark" legislation and subdivision control also have been held to be constitutional, as similarly falling within the police power.

Other devices have been accepted in many State and Federal courts, such as a complete moratorium on development for a specified period in areas where pressures on the environment are becoming excessive; and close controls have been accepted in areas having special problems, such as the San Francisco Bay, and wetlands in several States. In Massachusetts, the Coastal Wetlands Act 1968 empowered the State authorities to make protective orders, after extensive local hearings. When such an order has been made, this has the effect of prohibiting any substantial development in the protected area; this does not offend the constitutional provision because it does not grant the general public any rights to use private owner's property as he retains all his rights, so long as he does not seek to violate the order. In Wisconsin, the Water Resources Act 1966 authorizes counties in the State to make regulations for the protection of shorelands, and the State Department of Natural Resources can make such regulations in default of county action. These regulations and special zoning ordinances made under
the same Act are designed primarily to prevent water pollution in the specified areas.

Second homes have been the subject of special prohibitory controls in Vermont where the forests are in particular danger, and a special regulatory agency has been established under a statute of 1970. Some main highways are the responsibility of the States, others of the Federal Government; at both levels the administration has powers of condemnation of private property for this purpose on payment of compensation, but there is but rarely an opportunity for any effective public participation in decision making.

Other major federal projects that may affect the environment are subject to the (Federal) Environmental Policy Act 1970. This requires the appropriate Federal agency to file an Environmental Impact Statement before it carries out any project liable to harm the environment. In addition, the Endangered Species Act 1974 may be invoked to prohibit the carrying out of any federal project that may have the effect of destroying a rare species of flora or fauna.

The Federal Clean Air Act 1969 (similar in some aspects to the clean air legislation in Britain and France), the Water Pollution Control Act 1972 and the Coastal Zone Management Act 1972 deal with other environmental matters and impose forms of control over land use. The American Law Institute formulated in 1975 a Model Land Development Code (for adoption by State legislatures), which would impose comprehensive controls, so drafted as to leave the possibility of profitability with the landowner, and so avoiding the "taking" issue. This Code has not yet been adopted fully in any State.

In general, the United States federal and State administrations deal with some of the threats to the environment listed in the first paragraph above. But the controls over development in the "non-critical" areas, suburban sprawl, the denudation of central urban areas, and the establishment of new towns by government agencies or private enterprises, are not always subject to effective controls. Zoning is in some areas mis-used so as to maintain high property values, and this can - and sometimes does - result in the creation of squalid areas "on the wrong side of the tracks".

Zoning and sub-division control is a matter for local option, dependent in the first place on the existence of a State enabling Act, and then on the initiative of each local community to use the Enabling Act to pass a Zoning Ordinance. When so much is left to local initiative, without any centralized supervision, the effectiveness of zoning in practice becomes spasmodic and susceptible to local economic and political pressures. Houston, Texas, for example, has no zoning control in force at all, and this is also true of very large areas of open country.

V. Regional Plans and Positive Planning

Most of the features and trends already discussed are to be seen also in Continental Europe. Detailed building controls over materials used and the design of buildings and their siting, are common in all countries, but these controls are rarely capable of being used so as to assist substantially in the struggle to pre-
serve or improve the environment. Some countries (rural areas in Austria in particular) take architectural considerations into account when operating their building controls, and some English planning authorities employ "architects' panels" to advise them. Aesthetic considerations are not generally relevant to the context of other forms of land use control.

In a number of countries, however, we can note a marked trend to enhance land use controls by planning on a larger scale through the adoption of regional plans and positive planning, i.e. positive government action to shape land use including expropriation with a view to securing an optimum use of land for some purpose designated in a plan.

a) Remembrement

A unique form of positive planning is to be seen in several countries of Continental Europe. Remembrement will be found, with local variations, in France, Italy and Belgium. This is a complicated process, initiated by the local authority but subject to control by the administrative courts, whereby the fragmentation (resulting from obsolete inheritance laws) of agricultural holdings can be brought together into concentrated ownerships.

b) Regional planning

All countries that make any pretensions towards a system of land use control prepare some form, however sketchy, of a comprehensive plan at the local level. Without some such plans land use controls become pragmatic and virtually meaningless. Modern trends are all towards planning on a wider scale. Some countries have express provision for the preparation of regional plans, although they may lack legal force, being intended only as guidance for local administrators. For example, Finland has had a law requiring the preparation of regional plans since 1938, but such plans as have been prepared have never been given legislative effect; there is much the same situation in Sweden. Where a regional plan is in the course of preparation, there is much more opportunity for environmental and ecological matters to be taken into account, than is possible when merely local features are at issue.

By the preparation of local and regional plans something more should be meant than merely providing a guidance for restrictive land use controls. Nevertheless, even regional planning is not always used so as to achieve environmental results. In Belgium, for example, its objective has been described in a leading text book as follows:

"Son but est d'assurer un élévation du niveau de vie, sur l'ensemble des territoires et d'atténuer les inégalités régionales en facilitant le développement des régions les plus défavorisées".

An Australian writer has described the purpose of regional planning in the following terms:
"To guide the development of the resources of the nation and their use in productive enterprise, so as to provide a rising national income and therefore a rising standard of welfare"\(^1\).\(^4\)

For England, it has been said that "regional plans should have positive policies for shaping the future development of the region"\(^1\). Only a few English plans have legislative effect, and even in the case of the plans for counties, there is no express reference to environmental considerations in the legislation. The Community Land Act 1975 made provision, if its requirements are fully implemented, for all development land to pass through public ownership before any development may be carried out. A local authority having acquired the land will then either develop it themselves or dispose of it to a private developer subject to a condition that prescribed development will in fact be carried out. With environmental objectives in mind, much could be achieved by this method, but the legislation again makes no reference to environmental considerations, and it is currently subject to modification.

France has nevertheless made a substantial effort nationally to protect the environment; that country has even designated a Minister "for the Quality of Life". In 1976, a law was passed requiring *études d'impact* to be carried out before major projects of development are undertaken and also empowering *départements* to establish, after an elaborate administrative procedure including a public inquiry, "Zone d'Environnement Protegé" (ZEP)\(^1\). The main objective of a ZEP is to preserve agricultural land from a threat of urbanization, and the initiative in declaring such a zone is placed squarely on the prefect, but he will act on advice from the central government.

The declaration of a ZEP brings into operation within that zone a tight planning control, similar to that applicable throughout the United Kingdom. Within a ZEP the laws applying generally to urban areas in France, which require a licence for building to be obtained from the *maire* (*permis de construire*) will apply throughout the zone, and it may also be necessary to obtain a permission for a change of use. There are also special controls over wooded areas.

The concept of the ZEP (which may be an extensive area spreading over more than one *département*) is perhaps an example of national environmental planning only in so far as encouragement is given by the central legislature for *départements* and communes to take protective action, but much is still left to local goodwill\(^1\). The concept of the ZEP could with advantage be adopted by other jurisdictions not having a comprehensive system of land use control on the English pattern.

Somewhat similar provisions are contained in the Physical Planning Act of the Netherlands (as revised in 1964). Article 16 of this Act provides that special regulations may be made in respect of specified areas stating that any construction permit for particular types of works may be granted by the municipality only after the Provincial Executive have stated that they have no objection. In practice this procedure is used to safeguard environmental considerations, although this is not expressly stated in the law\(^1\).\(^8\).
Western Germany has been progressing in recent years with the preparation of regional plans on a Land basis, and federal laws of 1976 have required environmental considerations to be taken into account on the preparation of any regional plan. There is a similar provision in New Zealand in relation to their regional and "maritime plans" (Town and Country Planning Act, 1977 (N.Z.)). This provision has not yet been fully implemented, and in Germany regional plans covering a complete Land have been prepared only in the case of the small city Lander of Hamburg and Bremen; in some Lander two or more regional plans have been prepared, as in the case (e.g.) of Schleswig-Holstein. There is still, however, no national plan for the whole Federal Republic. The Netherlands, with their special geographical difficulties and high density of population have perhaps proceeded with positive planning further than most countries. Some aspects are considered at national level and there is a cabinet committee concerned with the subject. 45% of the land in the Netherlands was covered by regional plans in 1977.

VI. Conclusion

The following "trends" and devices already in use in some countries can be detected as being capable of assisting in the fight for a better environment, and as solving in some measure the problems listed in the opening paragraph:

a) Sub-division control as a means of securing open spaces and amenity areas in newly developed residential estates;

b) Public advertisement being required before a licence to develop is granted or before some major planning decision is taken, thereby alerting the public to prospective dangers to the environment. The English conservation area and the Netherlands procedure for Crucial Physical Planning Decisions are typical examples of this;

c) Closely related to this is the requirement of an environmental impact statement. This device, pioneered in the United States, is becoming popular in other countries; the études d'impact in France are an example; the subject is currently under examination in the United Kingdom;

d) The practice of listing "landmarks" of significant interest. The increasing use in many countries of grants from public funds towards the preservation of such buildings should be encouraged;

e) The preservation and use for public recreation and exercise of national parks, and in some jurisdictions of the smaller "State" or "country" parks, although these are subject to abuse if over-used;

f) The complete protection of (comparatively small) areas where fauna or flora of special scientific interest are to be found;

g) Special controls over woodland areas and preventing the display of advertisements are to be found in several countries;
h) Many countries have written constitutions with a "no taking without compensation" clause. Some of the devices adopted in the U.S.A. to avoid this complication could well be adopted in these other jurisdictions;

i) One of the most important trends in Europe today is the increasing preparation of regional plans as a means not only of affording guidance for restrictive planning, but also so as to ensure that planning achieves a positive result. This is particularly important where environmental questions are made a prominent feature of the planning process;

j) The example of the French ZEP may provide a precedent for tight controls over particularly sensitive areas for introduction in other countries. Closely related to the notion of the ZEP is the idea of the moratorium, or stop order on all development within a given area for a limited time, to be seen in the legislation of some American States and of Norway.

In many instances the machinery for securing a satisfactory environment is available through existing planning legislation; the problem is to persuade the politicians in whom power lies, to use that power and the machinery in the interests of the future of mankind. Perhaps most countries need a special protection agency capable of monitoring provisions designed for environmental protection. The United States has established such a body, but with limited (only federal) jurisdiction; the cabinet committee of the Netherlands and the much less influential English Countryside Commission seems to perform some of the required functions of such an agency, but preferably the agency should be seen to be independent of the central government.
Footnotes


2 Particularly in France, Germany and Belgium; but all the countries examined in "Planning Law in Western Europe" have established some system of detailed land use control.

3 Except in the United Kingdom, within a French ZEP and in those municipalities in Norway where a special restriction has been imposed on development (see n. 7 below).

4 See also the contribution by de Klemm, pp. 171-172.

5 In several Mediterranean countries, such as Greece or Spain, hotels may be found on the beach on an otherwise unspoilt island or stretch of coast. Britain is by no means free of similar offences against the physical environment in spite of its comprehensive planning system. A means of coping with this problem is obligatory environmental impact assessment; see the contributions by Wandesforde-Smith, pp. 103-104.

6 This procedure was followed in 1955 when the local authority had granted planning permission for the establishment of a fried fish and chip shop, opposite Eton College, the famous public school. As a consequence of a public outcry, the Authority revoked their previous decision and then had to pay compensation to the shop owner.

7 See the contribution by Dolzer, p. 29 et seq.

8 In Pennsylvania Coal Co. v. Mahon 260 U.S. 393 (1922), Mr. Justice Holmes giving judgment in the Supreme Court said: "The general rule at least is, that while property be regulated to a certain extent, if regulation goes too far it will be recognized as a taking". Ever since the Pennsylvania Coal Co. case the Federal courts have applied a balancing test - a weighing of the public benefits of the regulation against the extent of loss of property values. Zoning has been recognized as not unconstitutional, since Euclid v. Ambler Realty Co. 272 U.S. 365 (1926), in that it falls on the police power rather than the "taking" side of the balance, and varieties of the zoning device have been upheld in such subsequent leading cases as Goldblatt v. Hempstead 396 U.S. 590 (1962).

9 The constitutionality of a landmark provision in a New York statute was upheld recently in respect of Penn Central Railway Station in New York City (erected in 1911): Penn Central Transportation Co. et al. v. New York City et al. No. 77 444, June 26, 1978.

10 Particularly in Florida, where a batch of statutes was passed in 1972 to meet an emergency caused by drought and excessive development. A moratorium may be imposed on all development over a limited period in "areas of critical concern" or "developments of regional impact": see Reilly, op. cit., n. 1, p. 64 et seq. This device is similar to the provision in section 33 of the Norwegian Building Law of 1965, under which the municipal authority may lay down a prohibition against any form of development (even if it is in accordance with the current plan) for a period not exceeding two years, pending re-consideration by the authorities of the planning for the area in question.
11 This system can be enforced through the courts at the instance of concerned members of the public and pressure groups. See the contribution by Wandesforde-Smith, pp. 105-108.
12 See n. 8 above.
13 Hambye and others, op. cit., n. 1, p. 21.
14 Fogg., op. cit., n. 1, p. 547.
16 On this subject, see article by Distel, A.J.P.L., December 1977, 931.
17 This point is brought out in an article, Billandot "Les délégues régionaux à l'Environnement", Annales de la Faculté de Droit de Sceaux, 195.
19 Such areas may be effectively protected under legislative controls in the United Kingdom and in France.
20 For example, Germany, Israel and Cyprus. The courts in Northern Ireland have held that planning restrictions do not amount to a "taking" of property for the purposes of their constitution contained in the Government of Ireland Act 1920 (Belfast Corpn. v. O.D. Cars Ltd., 1960, 1 All E.R. 85).
21 The Environmental Protection Agency established in 1970, and the Council on Environmental Quality established a few months earlier. The EPA is an executive body; the CEQ was established principally to advise the President on environmental matters, but it also monitors the carrying out of environmental impact analysis by Federal agencies.
**La protection des zones d'intérêt écologique**

Cyrille de Klemm

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IV. Conclusion

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I. L'importance du problème

La destruction généralisée des milieux naturels et des espèces végétales et animales qui les composent est un phénomène très récent dans l'histoire de l'humanité. L'explosion démographique du XXe siècle, les progrès de la science et de la technique, le développement économique ont eu pour contrepartie une appropriation par l'espèce humaine de la plupart des terres encore sauvages avec pour conséquence l'élimination des associations naturelles, la destruction de nombreux écosystèmes et l'extinction d'un nombre croissant d'espèces.

Pour n'en donner que quelques exemples, la grande forêt tropicale humide, milieu extrêmement riche en espèces, est abattue au rythme de 110.000 km² par an. Elle aura complètement disparu au début du siècle prochain si rien n'est fait pour renverser cette tendance. Plus de mille espèces de vertébrés sont menacées d'extinction et figurent à ce titre dans les Livres rouges des espèces en danger que publie l'Union internationale pour la conservation de la nature et de ses ressources (UICN). Plus de 10% des espèces de plantes à fleurs, soit au moins 20.000 sur un total de 200.000, sont aujourd'hui en danger immédiat de disparition. Nul ne sait, faute d'études suffisantes, combien d'espèces de mousses, de champignons, de lichens ou d'algues sont dans la même situation. Il en va de même des invertébrés dont un grand nombre sont liés écologiquement aux plantes menacées et disparaîtront avec elles.

La destruction des milieux naturels et l'extinction des espèces sauvages constituent des phénomènes irréversibles qui ont pour conséquence un appauvrissement considérable des ressources génétiques à la disposition de l'humanité. Or nous ignorons encore presque tout de la physiologie, de la biologie, de l'écologie et de l'éthologie d'un très grand nombre d'espèces. Il existe certainement des milliers de substances produites par des êtres vivants et autant de processus biologiques qui nous sont encore inconnus et dont certains se révèleront certainement un jour d'une importance capitale en biologie, en médecine, en agriculture ou dans l'industrie. Il existe aussi certainement de nombreuses espèces d'animaux et de plantes susceptibles d'être domestiquées ou cultivées et d'accroître ainsi la diversité de ressources disponibles pour l'homme. Il existe enfin de nombreuses variétés sauvages d'espèces qui ont déjà été domestiquées ou cultivées et dont la disparition serait catastrophique en raison de la perte génétique qu'elle représenterait. Il est donc essentiel de sauvegarder des populations viables du plus grand nombre possible d'espèces sauvages. Mais on ne peut préserver une espèce isolément, on ne peut le faire qu'en prélevant en même temps l'habitat dans lequel elle vit et qui comprend un plus ou moins grand nombre d'autres espèces, toutes liées les unes aux autres par des liens écologiques. Chaque type d'association naturelle d'espèces constitue un écosystème et ce sont des échantillons représentatifs de ces écosystèmes qui doivent de toute évidence être préservés. Ainsi non seulement sera-t-il possible d'assurer la sauvegarde des espèces qu'ils contiennent, mais encore de disposer de véritables laboratoires vivants permettant l'étude des phénomènes naturels ainsi que de zones témoins qui pourront servir à mesurer les conséquences des modifications apportées par l'homme dans les régions voisines.

Il semble donc essentiel que les États acceptent dès maintenant de prendre des mesures conservatoires afin que les générations futures aient la possibilité d'util-
liser, même si maintenant elles nous paraissent encore sans valeur, toutes les ressources naturelles de notre planète; or ces mesures doivent nécessairement consister en la mise en réserve d’échantillons représentatifs de tous les types d’écosystèmes de la terre car pour reprendre les mots du généticien australien, Sir Otto Frankel, "ce qui est en jeu ce n’est pas seulement l’extinction d’espèces prises individuellement, en dépit du rythme élevé de ces extinctions dans de nombreuses parties du monde, rythme qui va d’ailleurs en s’accélérant. Cela n’est pas sans précédent dans l’histoire de l’évolution. Mais ce qui est sans précédent c’est la destruction prévisible des habitats des dernières associations naturelles ou semi-naturelles de notre terre ainsi que de la plupart des espèces qu’elles contiennent. Sans protection délibérée, bien peu seront celles qui pourront survivre" 9.

L’importance et l’urgence du problème, un des plus sérieux peut-être de l’époque actuelle, paraissent donc bien établies. Pendant longtemps, toutefois, les pouvoirs publics ne semblent pas en avoir pris suffisamment conscience et dans de nombreux pays la dégradation des milieux naturels n’a fait que s’accentuer.

Il est vrai, cependant, que la création du premier parc national, celui de Yellowstone aux États-Unis, remonte à 1872, et que depuis cette date, il a été institué un peu partout un nombre assez considérable d’aires protégées. Mais ces réserves ont pendant longtemps été créées au coup par coup, sans plan d’ensemble et sans critères scientifiques de sélection. À l’époque on choisissait, en général, des sites ou des monuments naturels spectaculaires, ou des terres impropre à l’agriculture ou à l’élevage souvent très éloignées des villes et quelquefois même réduites aux frontières. Les exemples abondent10.

En outre, si l’on examine la répartition géographique des aires protégées, telle qu’elle se présentait il y a encore vingt ou trente ans, on s’aperçoit que ces aires avaient surtout été établies dans des régions peu peuplées et que dans les régions à population dense comme l’Europe occidentale ou certaines parties des États-Unis, il n’y en avait presque aucune. Les catégories d’aires protégées étaient peu nombreuses et leur régime juridique était strictement fixé par les textes, ce qui laissait peu de place à un système de gestion souple adapté aux circonstances. Quant à la gestion des aires protégées elle était encore à ses débuts et se réduisait dans bien des cas à des mesures d’administration plutôt que de gestion scientifique.

Malgré ce manque d’intérêt général il est remarquable que deux importantes conventions internationales aient pu être conclues en 1933 et 1940 sur la protection de la nature en Afrique et en Amérique11. Ces deux traités prévoient que les États contractants créeront sur leurs territoires des aires protégées répondant à certains critères de protection.

Ces traités, et notamment la Convention de Londres relative à l’Afrique, ont joué un rôle important car de nombreuses législations nationales s’en sont inspirées, avec pour conséquence la création d’un nombre assez important d’aires protégées bénéficiant de critères minimums de préservation. En revanche d’impor tandants écosystèmes un peu partout dans le monde continuaient à ne recevoir aucune protection. S’il en est encore ainsi dans une assez grande partie du monde, il semble néanmoins que l’on assiste depuis quelques années à un ren-
versement de cette tendance avec la promulgation d'un certain nombre de lois modernes qui doivent permettre de sauvegarder l'essentiel. Sur le plan du droit international, d'autre part, une évolution paraît maintenant se dégager allant dans le sens sinon de la reconnaissance d'une obligation universelle de conservation, au moins d'une coordination internationale de la préservation des écosystèmes. C'est la question qui sera examinée dans les pages suivantes.

II. Les aires protégées dans les droits nationaux

1. Les différentes catégories d'aires protégées.

L'expression "aire protégée" s'applique à tout territoire bénéficiant d'un certain régime juridique de protection et relevant, pour la mise en œuvre de ce régime, d'une autorité responsable désignée par la législation. Cette expression peut donc recouvrir des institutions très différentes selon les pays, ou, à l'intérieur d'un même pays, selon le degré de protection dont les aires protégées bénéficient ou selon la compétence administrative ou territoriale des autorités responsables de la protection de ces aires. A chaque type d'aire protégée correspond en général, dans chaque pays, un nom, une appellation, désignant soit le degré de protection accordé aux aires de cette catégorie (parc national, réserve naturelle, refuge) soit le domaine de compétence de l'autorité qui en assure la gestion (réserve forestière, réserve de faune, parc marin). La terminologie utilisée varie considérablement d'un pays à l'autre. Malheureusement jusqu'à présent il n'a pas été possible de se mettre d'accord sur les noms attribués aux différentes catégories d'aires protégées et sur le régime de protection dont devrait bénéficier chacune d'entre elles; la plus grande diversité, pour ne pas dire la plus grande fantaisie, continue donc à régner dans ce domaine. Il en résulte qu'il est souvent impossible de déterminer, en se fondant uniquement sur l'appellation donnée à une réserve, quel est son régime juridique réel sans se reporter dans chaque cas à la législation du pays intéressé. Ainsi l'expression "National park" désigne en Angleterre un simple paysage protégé, alors qu'aux États-Unis, dans la plupart des pays d'Afrique et dans un assez grand nombre d'autres États cette expression s'applique à des territoires bénéficiant d'une protection beaucoup plus stricte. Plusieurs tentatives ont été faites pour porter remède à cette situation et procéder à un début d'harmonisation. Elles ont échoué devant les particularismes nationaux.

Pour essayer de débrouiller une situation apparemment assez confuse il ne paraît pas inutile de tenter une classification des différents types d'aires protégées tout en décrivant en même temps les tendances actuelles qui président à leur évolution. Les aires protégées peuvent se classer de deux façons différentes selon que l'on prend pour critère le régime de protection qui leur est accordé ou la compétence de l'autorité dont elles relèvent.

a) Classification à raison du type de protection accordée

aa) Les catégories traditionnelles

La Convention de Londres de 1933 sur la protection de la nature en Afrique prévoyait déjà l'institution de deux types importants d'aires
protégées: la réserve naturelle intégrale où toute activité humaine doit être interdite afin de permettre le libre jeu des phénomènes naturels et le parc national, territoire ouvert au public, où doivent surtout être interdites la chasse ou la destruction de la faune et de la flore. Une troisième catégorie que ne mentionnait pas la Convention de Londres était celle de la simple réserve, presque toujours une réserve de chasse12.

Ces catégories traditionnelles continuent d'ailleurs à être mentionnées dans un grand nombre de législations mais les différences juridiques ou de fait entre ces catégories tendent progressivement à s'estomper car, avec le progrès des connaissances scientifiques relatives aux écosystèmes et aux espèces que l'on désire préserver, il est apparu rapidement qu'un régime juridique trop rigide risquait d'aller à l'encontre du but même que l'on s'était fixé. On s'est ainsi, par exemple, rendu compte qu'il faut souvent procéder à certaines mesures d'aménagement ou de gestion dans les réserves intégrales, qu'il est quelquefois vital de fermer aux visiteurs une partie au moins d'un parc national ou qu'on ne peut se contenter d'interdire dans une réserve la chasse d'une espèce animale sans en même temps protéger l'habitat de cette espèce. Enfin, il est des interdictions qui peuvent être aussi nuisibles que des interventions. On s'est ainsi aperçu qu'il ne fallait pas toujours éliminer complètement l'usage du feu comme moyen de gestion d'une aire protégée on encore que si on laisse la végétation naturelle suivre son évolution normale elle tend, par étapes successives, vers un optimum, alors que l'on peut vouloir conserver en l'état une des étapes intermédiaires de la succession végétale: soit que l'on désire étudier un écosystème instable, soit que l'on souhaite conserver certaines espèces qui n'apparaissent qu'à cette étape particulière de l'évolution de la végétation. Mais ce maintien en l'état d'une étape intermédiaire de la succession suppose une intervention humaine, un acte de gestion qui ne doit pas être interdit par la loi, comme cela pourrait être le cas dans une réserve naturelle intégrale, par exemple.

bb) L'évolution des catégories traditionnelles

Le système traditionnel était avant tout fondé sur une série d'interdictions ou de règles fixées par le législateur et applicables à toutes les aires protégées appartenant à la même catégorie. Les lois modernes, en revanche, tout en conservant souvent la même terminologie, se sont orientées vers une réglementation fondée sur l'utilisation qui sera faite par l'homme des aires protégées appartenant aux différentes catégories, c'est-à-dire, par exemple, de la mesure dans laquelle le public aura accès à un territoire mis en réserve et à l'usage qu'il sera autorisé à en faire.

Ainsi, la nouvelle Code national colombien du 8 décembre 1974 qui a trait aux ressources naturelles renouvelables et à la protection de l'environnement classe les aires protégées (parcs nationaux, réserves naturelles, sanctuaires de faune ou de flore) en fonction de leur utilisation, c'est-à-dire des activités qui y sont autorisées (conservation, recherche, éducation, loisirs) et non plus, comme par le passé, de celles qui sont prohibées. Au Canada, il existe maintenant cinq catégories
différentes des zones protégées relevant toutes de l'Administration des parcs nationaux, et qui peuvent d'ailleurs fort bien coexister à l'intérieur d'un même parc. Ces zones vont de la réserve intégrale fermée au public, aux parcs urbains ou aux installations d'accueil dont l'utilisation par le public est évidemment intense. Entre ces deux extrêmes se situent les zones de nature vierge ouvertes au public mais dépourvues de routes, les zones d'environnement naturel où les véhicules ont accès et enfin les zones réservées aux loisirs de plein air. L'expression parc national ne correspond plus alors qu'à une simple unité administrative. La notion de réserve naturelle semble avoir de son côté considérablement évolué depuis quelques années. En effet le rôle d'une réserve est maintenant avant tout de protéger un écosystème ou un habitat déterminé, en général de faible superficie, et non plus de préserver simplement une population animale. D'ailleurs, dans les pays à forte densité de population où il n'existe plus de grands espaces naturels et où il est en conséquence difficile de créer des parcs nationaux de grande dimension, la réserve constitue souvent la seule forme d'aire protégée compatible avec l'occupation des sols. Il en est ainsi, par exemple en Angleterre, en Allemagne et dans bon nombre de pays d'Europe occidentale. Aux États-Unis et au Canada, des réseaux de réserves commencent aussi à se développer au niveau régional ou local. Ainsi plusieurs provinces canadiennes ont tout récemment adopté des lois permettant la création de réserves destinées à la protection de certains habitats particuliers et à la recherche scientifique.13 Quant aux réserves naturelles intégrales elles tendent à disparaître en tant qu'unités territoriales autonomes au profit de zones à régime de protection renforcée à l'intérieur de parcs nationaux ou de réserves analogues, ce qui n'exclut pas, en cas de nécessité scientifique, des mesures d'aménagement ou de gestion.

c) Les nouvelles catégories d'aires protégées

Parallèlement à l'évolution des catégories traditionnelles, de nouvelles formes d'aires protégées ont commencé récemment à se développer. Les "wilderness areas" ou "zones de nature vierge" se caractérisent par la mise en réserve de grandes étendues sauvages que l'on décide de maintenir en l'état en interdisant toute forme de développement économique et notamment la construction de routes permanentes et d'aérodromes, ce qui a pour résultat d'en restreindre considérablement l'accès. Ce type de réserve n'est évidemment possible que dans les pays disposant encore de superficies importantes de terres vierges. Prévues déjà par la Convention sur la protection de la nature sur le continent américain (Washington 1940) 14, cette catégorie d'aire protégée s'est considérablement développée depuis quelques années. Aux États-Unis une loi de 1964, le "Wilderness Act" 15, a établi un véritable réseau de "wilderness areas" dont l'originalité est qu'il ne s'adjoindra pas aux réseaux existants mais se superposera à eux. Ainsi des "wilderness areas" ont été créées dans des parcs nationaux, des "national forests" ou des "national wildlife refuges" 16. D'autres "wilderness areas" ou "primitive areas" ont été créées ou sont en cours de création en Australie, au Canada et en...
U.R.S.S. La protection de certains types d'habitats tels que les estuaires, les rivages marins, les cours d'eau et leurs berges a également donné lieu, aux États-Unis notamment, à l'institution de formes particulières protégées dotées de leurs règles propres.

Enfin, aux États-Unis également, un nouveau type de protection a vu le jour récemment. Il s'agit de la détermination de l'habitat critique, c'est-à-dire de l'habitat indispensable à la survie des espèces menacées d'extinction. La simple publication par la voie réglementaire des limites géographiques de l'habitat critique d'une espèce publication effectuée par le "Secretary of the Interior", autorité compétente en matière de faune sauvage, entraîne ipso facto pour toutes les administrations fédérales l'interdiction de toute action qui pourrait être dommageable à cet habitat17. Cette formule simple et originale, qui a le mérite d'éviter des acquisitions coûteuses, a déjà fait la preuve de son efficacité18.

b) Classification à raison de l'autorité compétente

Dans la plupart des pays, l'autorité compétente dont relèvent les aires protégées est une autorité qui a été spécialement instituée à cet effet par la loi. Il en est ainsi, par exemple, du "National Parks Service" aux États-Unis, du "Nature Conservancy Council" en Angleterre ou de la "National Parks Authority" en Nouvelle-Zélande. Il arrive cependant souvent qu’à ce réseau principal d'aires protégées se juxtaposent d'autres réseaux relevant soit d'autorités provinciales ou locales ou même de personnes privées, soit d'autorités relevant elles aussi du gouvernement central auxquelles la loi aura attribué une compétence territoriale particulière ou une compétence dans un domaine d'action déterminé.

aa) Aires protégées ne relevant pas des autorités centrales

Cette catégorie revêt une importance particulière dans les États fédéraux où il existe souvent deux réseaux juxtaposés d'aires protégées: un réseau fédéral qui peut s'étendre à l'ensemble du territoire ou qui peut au contraire être limité aux zones relevant exclusivement du gouvernement central et un réseau distinct dans chacun des États ou des provinces et relevant exclusivement des autorités de ces États ou provinces19. On observe en outre, depuis quelque temps, une tendance marquée à la création de réserves à l'échelon purement local ou municipal, et cela dans les États fédéraux comme dans les États unitaires. C'est là le signe que les autorités locales commencent à attacher un plus grand intérêt à la protection de la nature; mais pour être pleinement efficace leur action devrait être complémentaire de celle entreprise à l'échelon supérieur et la coordination nécessaire devrait être prévue par la loi. Il en est ainsi par exemple en Angleterre où les "county councils" ou "district councils" sont habilités à créer des réserves naturelles sur leur territoire mais doivent néanmoins exercer ces fonctions en consultation avec le "Nature Conservancy Council"20.

Aux États-Unis, une loi fédérale adoptée par le Congrès en 1978 crée une réserve d’un nouveau type, la Pine Barrens National Reserve, pour
protéger une région d'un grand intérêt écologique située dans l'État de New Jersey. Les dimensions de la région à protéger (400.000 hectares) étaient telles qu'il était impossible au gouvernement fédéral d'acquérir toutes les terres nécessaires à l'établissement de cette réserve. D'autre part il existait déjà dans la région un certain nombre de réserves relevant de l'État de New Jersey ou d'autorités locales. La nouvelle loi prévoit l'achat par le gouvernement fédéral de 20.000 hectares seulement, les 380.000 hectares restant étant gérés par une Commission composée de représentants du gouvernement fédéral et des collectivités locales du New Jersey. Cette commission doit élaborer un plan de gestion pour l'ensemble de la région protégée et le présenter au "Secretary of the Interior" qui, s'il l'approve, le soumettra ensuite au congrès.

Enfin il convient de ne pas oublier le rôle de plus en plus important joué par les réserves privées, en particulier celles qui sont la propriété d'associations. Ce type de réserve se développe dans de nombreux pays, par exemple aux États-Unis et maintenant en France, où l'association "Espaces pour demain" vient de procéder récemment à ses premières acquisitions, grâce à des mesures d'incitation comprenant notamment des avantages fiscaux. Il est particulièrement répandu en Angleterre où il représente une proportion importante de la superficie totale des aires protégées. Dans ce dernier pays les associations qui gèrent ces réserves travaillent en étroite collaboration avec le Nature Conservancy Council.

bb) Aires protégées relevant d'autorités centrales à compétence particulière:

Il s'agit ici des cas où certains types d'habitats ne relèvent pas de la compétence des autorités normalement chargées de l'administration des aires protégées. Il en est ainsi, par exemple, des réserves forestières souvent dotées de leurs règles propres et qui dépendent en général du ministère de l'agriculture, du réseau des "National Wildlife Refuges" aux États-Unis qui relève du Fish and Wildlife Service et non de l'administration des parcs nationaux ou encore du nouveau réseau des réserves d'estuaires, aux États-Unis également. Il faut encore citer ici la protection des rivages marins qui dépend quelquefois d'une administration particulière. C'est le cas, par exemple, en France où cette protection est réalisée par le truchement d'une institution originale, le Conservatoire du littoral, chargée d'acquérir et de gérer les derniers fragments des côtes françaises épargnés par le développement.

Dans de nombreux pays la création de parcs marins et la gestion de ces parcs relèvent d'une administration particulière, en général l'administration chargée des pêches maritimes. Cette attribution de compétence est souvent la conséquence de raisons purement historiques, toutes les questions relatives à la mer étant, quelquefois depuis longtemps, confiées au même ministère. C'est ainsi qu'aux États-Unis une loi récente attribue au "Department of Commerce", compétent en matière de pêche, le soin de créer un réseau de réserves marines.

Il convient cependant de remarquer qu'un partage trop strict des compétences entre administrations rivales peut avoir des conséquences néfastes...
sur la conservation de certains écosystèmes si ces derniers relèvent de plusieurs administrations différentes alors qu'ils constituent des unités écologiques. Il en serait ainsi, par exemple, d'un écosystème dont la partie terrestre serait gérée par l'administration des parcs nationaux et la partie marine par le service compétent en matière de pêche. Dans un tel cas, lorsqu'il est impossible de faire dépendre la réserve d'une administration unique, la gestion de l'ensemble de l'unité écologique qu'elle constitue devrait être confiée à un organisme où seraient représentées les deux administrations compétentes.

2. Les inventaires écologiques et la sélection des aires à protéger.

Pour pouvoir protéger des échantillons représentatifs des différents types d'écosystèmes il est essentiel de commencer par établir un inventaire des habitats naturels ou semi-naturels existants parmi lesquels il faudra ensuite choisir ceux qui doivent être protégés en se fondant sur certains critères de sélection. Il en va de même pour ce qui est de la conservation des habitats des espèces menacées, rares, vulnérables ou endémiques. Fort peu de législations, pourtant, en font une obligation juridique alors que de tels inventaires semblent devoir constituer dans bien des cas une étape préliminaire indispensable à la création d'un réseau moderne et complet d'aires protégées. Seules quelques lois très récentes contiennent des dispositions allant dans ce sens. C'est le cas, par exemple, de la loi japonaise de 1972, de la loi américaine de 1976 amendant le "National Park Act" et de l'arrêté du Conseil fédéral suisse de 1977 qui prévoit l'établissement d'un inventaire fédéral comprenant des exemples des différents types de paysages suisses avec leur flore et leur faune.

De même l'obligation de choisir et de protéger des échantillons représentatifs des différents écosystèmes figure rarement dans les législations. On peut le regretter puisque l'existence d'une telle obligation inciterait les autorités compétentes à s'efforcer de protéger une gamme d'habitats aussi étendue que possible. Il faut cependant reconnaître que depuis quelque temps la pratique des États s'oriente de plus en plus vers la protection de certains types d'écosystèmes qui avaient été en grande partie négligés dans le passé. Il en est ainsi par exemple des rivages marins, des estuaires, de certains cours d'eau et de leurs berges, comme le réseau des "wild and scenic rivers" aux États-Unis, et surtout de certaines zones maritimes à l'égard desquelles, devant l'inquiétude des milieux scientifiques, plusieurs conférences internationales, convoquées à cet effet par l'Union internationale pour la conservation de la nature, ont toutes souligné l'importance et l'urgence de mesures de protection.

Ainsi aux États-Unis des lois récentes prévoient la constitution de réserves d'estuaires, soumises à un régime particulier et de réserves marines relevant du "Department of Commerce". En Australie, la loi fédérale sur la conservation de la nature de 1975 autorise la création de réserves marines dans les zones soumises à la compétence fédérale et la même année une loi particulière était également adoptée pour assurer la protection de la Grande barrière de corail. Un loy prévoyant la création d'aires protégées dans cet habitat d'intérêt exceptionnel.

D'autre part des inventaires ont été effectivement entrepris dans certains pays par des universités ou des organisations privées et ces inventaires sont naturelle-
mente mis à la disposition des autorités compétentes. Ces inventaires, une fois publiés, constituent déjà en eux-même une liste d'écosystèmes représentatifs qu'il convient de protéger.

Quant à l'élaboration des critères de sélection, il est rare d’en voir mentionner l'obligation dans la législation si ce n'est en termes très généraux. Ces critères, très importants en pratique, se prêtent en effet mal à la rigidité d'un texte juridique car il n'y a pas, en la matière, de critère qui soit toujours valable quelles que soient les circonstances. Ainsi une grotte ou un simple puits doivent pouvoir être protégés pour leur faune, un peuplement d'arbres communs pour leur pureté génétique, etc. Dans ces cas là, des critères de superficie ou de rareté même ne joueraient pas. C'est donc aux administrations compétentes qu’il revient d’élaborer, le cas échéant, leurs propres critères, dans le cadre d'une politique générale établie par la loi et fondée sur les résultats de la recherche scientifique.

3. L'établissement des aires protégées

La création d'une aire protégée doit être accompagnée de mesures destinées à assurer sa pérennité et à empêcher que son usage ne soit détourné de son objet initial. Ainsi dans de nombreux pays la législation prévoit que les aires protégées, ou au moins certaines d'entre elles, doivent être créées par une loi. Il en résulte que le déclassement de tout ou partie d'une aire protégée ainsi créée exige également l'intervention du législateur.

Certaines législations récentes, comme par exemple la loi indienne de 1972, la loi australienne de 1975 ou les lois de certains États ou territoires australiens, prévoient des procédures différentes pour la création d'une aire protégée et pour son déclassement. La création peut être prononcée par simple décision administrative mais le déclassement d’un territoire protégé exige en revanche une décision du législateur. L’existence d’une procédure de déclassement plus contraignante, plus complexe et plus publique que la procédure d’établissement doit ainsi permettre dans de bonnes conditions d’assurer la perennité de la protection.

Étant donné qu’un certain délai s’écoule nécessairement entre le moment où les autorités compétentes ont pris la décision de créer une aire protégée et l’entrée en vigueur de la loi ou du règlement prévoyant la création effective de cette aire, il peut, dans certains cas, être indispensable de prévoir des mesures conservatoires propres à empêcher dans la future aire protégée toute action susceptible d’en altérer l’état. C’est là un problème juridique difficile et peu de législations semblent s’en être préoccupées jusqu’à présent. En Angleterre la désignation par le “Nature Conservancy Council” d’un site d’intérêt scientifique particulier (site of special scientific interest ou S.S.I.) a pour conséquence l’obligation pour les collectivités locales de consulter le “Nature Conservancy Council” avant d’entreprendre des travaux affectant le site en question. En Suisse, l’inscription d’un territoire à l’inventaire fédéral entraîne pour les autorités fédérales l’obligation de ne rien faire qui puisse porter atteinte à ce territoire. En Australie, enfin, une loi de 1978, amendant la loi de 1975 sur les parcs nationaux et la faune, prévoit la possibilité de créer par simple décision administrative des “conservation zones” là où il n’est pas encore possible d’établir un parc ou une réserve et donne à l’administration des pouvoirs étendus de réglementation à l’intérieur de ces “conservation zones.”
Enfin pour obtenir l'appui indispensable des administrations publiques, de la communauté scientifique et du public en général, il parait essentiel, dans bien des cas, de prévoir la place qu'occuperont les aires protégées dans l'aménagement du territoire tant au niveau national que local, et de procéder à une large consultation de toutes les parties intéressées chaque fois que l'on envisage d'établir de telles aires. Peu de législations relatives aux aires protégées prévoient la création d'un lien direct entre l'aménagement du territoire et l'établissement de parcs ou de réserves, même si en pratique des relations de travail ne peuvent pas ne pas se développer entre les administrations compétentes. Aux Pays-Bas, la loi sur l'aménagement du territoire prévoit que les plans nationaux et locaux d'aménagement devront tenir compte de la création de parcs nationaux. En Angleterre, toutes les autorités publiques, nationales ou locales, sont tenues aux termes de la loi de 1968 (Contryside Act) de prendre en considération la nécessité de conserver le paysage, y compris la faune et la flore. Pour cela elles doivent, lorsqu'elles établissent leurs plans d'aménagement du territoire, consulter le "Nature Conservancy Council". Quant à la consultation ou, mieux encore, la participation du public aux procédures préalables à l'établissement d'aires protégées, les législations récentes, ou, à défaut, la pratique des autorités administratives, tendent à leur accorder une importance croissante. Ainsi aux États-Unis, le "Wilderness Act" de 1964 fait obligation aux administrations intéressées de procéder à des enquêtes publiques avant de solliciter l'approbation du Congrès pour la création de "wilderness areas" dans des aires protégées relevant de leur compétence. En Australie, la loi de 1975 sur les parcs nationaux prévoit que avant la création d'une aire protégée les personnes intéressées seront invitées à faire connaître leurs avis au directeur des parcs nationaux. Enfin, alors qu'en général les procédures d'établissement d'aires protégées ne sont engagées qu'à l'initiative de l'autorité compétente, la loi néo-zélandaise de 1971 sur les réserves marines prévoit une procédure originale qui, en raison de son intérêt, mérite d'être mentionnée ici. L'initiative de la création d'une réserve marine n'appartient plus à l'autorité compétente, en l'espèce le ministère de la marine, mais peut être prise par une université, la "National Parks Authority" ou par des associations ou organisations, dont le but est l'étude scientifique de la faune et de la flore marines ou de l'histoire naturelle. Le requérant rend publique sa demande de création de réserve et invite le public à présenter des objections éventuelles. Il transmet ensuite au ministère de la marine sa réponse aux objections qu'il aura éventuellement repues. Le ministre qui joue ici un peu le rôle d'un juge dans une procédure contradictoire prend sa décision en se fondant sur les informations qu'il a repues des deux côtés. Il tient compte également des droits des propriétaires, de la navigation, de la pêche et de l'intérêt public en général. Sa décision est définitive.

Une procédure assez semblable figure également dans le projet de réglementation établi au début de 1979 par la National Oceanic and Atmospheric Administration aux États-Unis pour les réserves marines. Aux termes de ce texte, toute personne pourra prendre l'initiative de recommander la création d'une réserve marine. L'administration choisira ensuite parmi les sites qui lui auront été ainsi proposés ceux qui répondent le mieux aux critères de sélection qui lui sont imposés par la réglementation. La procédure comprend de larges consultations avec toutes les parties intéressées, la tenue de réunions publiques, la rédaction d'une étude d'impact à laquelle participeront également toutes les parties en
cause et finalement une audition publique qui doit obligatoirement se tenir dans la zone côtière directement concernée par la création de la réserve.

4. La gestion des aires protégées

Une aire protégée répond toujours à un double objectif. Un objectif de protection d’un écosystème ou de l’habitat d’une espèce, et un objectif d’utilisation comme la recherche scientifique, les loisirs ou même la chasse ou la pêche. La législation se doit donc de tenir compte de ce double objectif. Pour cela deux méthodes sont possibles: on peut multiplier le nombre de catégories d’aires protégées, chacune de ces catégories correspondant alors à une combinaison donnée de mesures de conservation et d’utilisation et bénéficiant de ce chef d’un régime juridique particulier comportant des listes souvent longues d’activités interdites ou réglementées. Il s’agit dans ce cas, au fond, d’une extension des systèmes de protection traditionnels que l’on trouve encore dans un grand nombre de législations, notamment dans les pays où le public n’a pas encore peut-être suffisamment pris conscience des nécessités de la conservation et où il peut paraître préférable de ne pas accorder aux autorités chargées de la gestion des aires protégées un pouvoir discrétionnaire trop étendu. On peut également, et c’est dans ce sens que semblent s’orienter les législations modernes, se contenter d’un nombre limité de types d’aires protégées et prévoir simplement que la réglementation applicable dans chacune de ces aires devra être fonction de l’objectif qui a présidé à sa création. Ainsi chaque aire protégée dispose d’une réglementation qui lui est propre et qu’il sera toujours possible de modifier selon les nécessités. C’est là, de toute évidence, un système infiniment plus souple que celui où la même réglementation s’applique obligatoirement à toutes les aires protégées appartenant à la même catégorie. En général l’objectif d’utilisation sera subordonné à l’objectif de protection ce qui signifie que la gestion administrative d’une aire protégée devra être continuuellement adaptée aux impératifs de sa gestion scientifique. Encore faut-il que ces derniers soient clairement déterminés. Pour cela une recherche scientifique continue sera dans la plupart des cas indispensable. Ainsi la gestion d’une aire protégée et, à fortiori d’un réseau entier de parcs ou réserves, apparaît comme une opération complexe où les résultats de la recherche régissent les politiques à suivre tant en matière d’aménagement et de gestion scientifique que de pratiques administratives et de réglementation. Pour permettre à ces méthodes de gestion d’être plus facilement mises en œuvre, les législations modernes prévoient en général la création d’organes des gestion parti-culiers et l’élaboration de plans de gestion.

a) Les organes de gestion

De nombreuses administrations centrales chargées de la gestion de parcs nationaux ou d’autres types d’aires protégées sont maintenant assistées dans leur tâches par un organisme consultatif chargé de les conseiller, notamment en matière scientifique; mais il s’agit là surtout d’un organe participant à l’élabo-ration d’une politique nationale et il est bientôt apparu que seul un organe particulier à chaque aire protégée, surtout lorsque celles-ci sont de grandes dimensions, pouvait jouer le rôle consultatif ou, le cas échéant, administratif nécessaire au niveau local. Ainsi d’assez nombreuses lois ont maintenant prévu la création d’organismes ou de commissions dont les fonctions sont soit des fonc-tions de gestion directe des parcs ou réserves, comme c’est le cas en France où
chaque parc national est géré par un Conseil d'administration qui est un étab-
blissement public47, ou en Nouvelle Zélande où l'administration des parcs est
effectuée par des “Park Boards”48, soit des fonctions simplement consultatives
auprès de l'administration chargée de la gestion, c'est-à-dire en pratique auprès
d'un directeur nommé par l'administration centrale.

Quant à la détermination de l'autorité compétente pour adopter des règlements
relatifs à la protection ou à la gestion d'une aire protégée particulière, aucune
tendance marquée n'apparaît dans les législations. Seule, souvent l'autorité cen-
traire a cette compétence, les autorités chargées de la réserve n'étant alors que de
simples exécutants; dans d'autres cas comme par exemple en Nouvelle
Zélande49, l'autorité administrant le parc ou la réserve peut préparer une régle-
mentation, mais celle-ci doit être entérinée par l'autorité centrale; enfin dans de
rares cas, l'autorité locale est directement compétente50.

b) Les plans de gestion

Depuis peu, les législations relatives aux aires protégées commencent à prévoir
l'obligation pour les autorités responsables de préparer un plan de gestion relatif
tochacun des parcs ou réserves relevant de leur compétence. Ces plans de gestion,
dans la plupart des cas, consistent en l'énoncé des objectifs de protection et
d'utilisation de l'aire protégée à laquelle ils s'appliquent ainsi que de la politique
générale qui sera mise en œuvre pour réaliser ces objectifs. Le plan de gestion
revêt donc une très grande importance et devient le complément indispensable
du texte juridique ayant créé l'aire protégée elle-même. Souvent le public et les
institutions scientifiques sont associés à l'élaboration du plan. En Australie la
préparation du plan de gestion a été jugée si importante que l'on suit pour son
adoption une procédure semblable à celle de la création de l'aire protégée elle-même51,
procédure qui comprend notamment la communication du projet
de plan au public pour avis et l'approbation du plan par le parlement. Cette
approbation est donnée pour une période maximum de dix ans au terme de
laquelle un nouveau plan devra obligatoirement être préparé et la même procé-
dure suivie pour son adoption.

Un des éléments essentiels de la gestion des aires protégées consiste souvent en
l'établissement, à l'intérieur d'un parc ou d'une réserve, d'un certain nombre de
zones dont les objectifs de protection et d'utilisation seront différents pour
ehacune d'entre elles, ce qui revient, en somme, à créer sur le territoire d'une
même aire protégée plusieurs réserves ayant chacune son régime juridique
propre. Ainsi, il peut y avoir à l'intérieur des limites d'un parc national, une zone
totalement fermée constituant une réserve naturelle intégrale, une zone con-
sacrée à la recherche où seraient autorisées certaines manipulations de l'éco-
système protégé et enfin une zone ouverte au public. Le zonage des aires proté-
gées s'est considérablement développé depuis peu car il permet une gestion ex-
trêmement souple et de nombreuses législations modernes en prévoient la possi-
bilité. Certaines d'entre elles se contentent de donner aux autorités compétentes
le pouvoir de procéder au zonage nécessaire et de créer par exemple à l'intérieur
d'une aire protégée des zones de protection renforcée. Un exemple en est la loi
japonaise de 1957 qui prévoit la possibilité de Créer à l'intérieur des zones de
paysages protégés (Parcs nationaux)52 des zones spéciales, et à l'intérieur de ces
zones spéciales d'autres zones spéciales de protection53. D'autres législations,
très récentes en général, font du zonage un élément essentiel du plan de gestion qu'elles exigent pour chaque aire protégée et prévoient, en outre, que chacune des zones créées devra également disposer de son propre plan de gestion. La loi australienne de 1975 relative à la protection de la Grande barrière de corail constitue un bon exemple de ce type de législation qui en raison de son intérêt mérite une analyse plus détaillée 54.

La loi commence par fixer la région géographique où elle sera applicable, c'est-à-dire l'ensemble de la Grande barrière de corail et certaines eaux adjacentes 55, à l'intérieur de laquelle seront ensuite désignées les régions qui constitueront le parc marin. Une fois créées, les régions formant ce parc marin ne pourront être déclassées sans l'approbation du parlement 56. Chacune de ces régions devra faire ensuite l'objet d'un plan de zonage 57. L'objectif de chacune des zones prévues, l'usage qui pourra en être fait, la réglementation de leurs accès seront spécifiés dans ce plan. Le plan est soumis à une enquête publique, est éventuellement remanié à la lumière des résultats de cette enquête et est enfin soumis à l'approbation du parlement. La loi prévoit en outre que le plan de gestion du parc marin pourra comprendre la création, à l'intérieur des régions déjà protégées, de zones de protection spéciales (special zones) qui ne pourront ensuite être supprimées ou dont on ne pourra réduire la superficie sans l'approbation du parlement. Enfin ces zones de protection spéciales devront elles-mêmes faire l'objet de plans de gestion particuliers 58.

5. L'influence des activités extérieures sur l'intégrité des aires protégées.

Il arrive souvent que des activités se déroulant à l'extérieur d'un territoire protégé, quelquefois même à d'assez grandes distances, soient susceptibles d'avoir des effets dommageables sur celui-ci. Il en est ainsi par exemple, d'ouvrages hydrauliques entraînant un abaissement de la nappe phréatique ou une modification du régime des eaux à l'intérieur de l'aire protégée, ou encore de l'abattage d'arbres ayant pour conséquence une érosion et un apport de sédiments en aval. Les autorités responsables des aires protégées sont presque toujours désarmées devant ces atteintes puisqu'elles ne sont pas compétentes pour réglementer ces activités.

Pour résoudre le problème, de nombreuses législations ont adopté le principe de la création de zones tampons ou de zones périphériques. Ces zones qui sont soumises à un régime de protection nettement moins strict que les aires protégées qu'elles entourent sont néanmoins sujettes à une réglementation des activités susceptibles de causer des dommages aux aires voisines 59.

Ainsi, pour prendre un exemple très récent, la loi espagnole du 28 décembre 1978 relative au Parc National de Donana prévoit en son article 3 que seules seront autorisées dans la zone périphérique les activités compatibles avec la finalité du parc. Le ministère de l'agriculture est habilité à réglementer dans cette zone l'usage des insecticides, des engrais et de tous autres produits qui pourraient être nocifs pour le parc.

Dans d'autres cas l'autorité chargée de l'administration des aires protégées se voit attribuer le pouvoir de réglementer certaines activités extérieures à la réserve. Ainsi en Angleterre le “Nature Conservancy Council” peut interdire la chasse
aux oiseaux au voisinage d'une réserve naturelle lorsque cela lui parait nécessaire pour la protection de la réserve60. De même la loi australienne de 1975 sur le parc marin de la Grande barrière de corail prévoit que l'autorité administrative peut réglementer ou interdire les activités qui, à l'intérieur ou à l'extérieur du parc, sont susceptibles de polluer les eaux et d'avoir ainsi des conséquences dommageables pour les animaux et les végétaux du parc61. En Espagne, la loi du 28 décembre 1978 sur le Parc National de Donana prévoit que sur la demande du Conseil d'administration du parc, le ministère de l'agriculture peut limiter ou suspendre toute activité susceptible d'affecter la quantité ou la qualité des eaux du parc (Art. 3.2.).

Au Canada, où ce sont les provinces qui sont compétentes en matière de ressources naturelles, le gouvernement fédéral négocie avec les autorités provinciales la création de parcs nationaux. Les accords qui sont le résultat de ces négociations prévoient, en général, que la quantité et la qualité des eaux d'un parc ne devront pas être affectées par la construction d'ouvrages ou par d'autres activités se déroulant à l'extérieur du parc. Enfin la loi américaine de 1972 relative à la protection du milieu marin prévoit que les activités maritimes autorisées devront être compatibles avec l'objet des réserves marines ainsi qu'avec la réglementation qui s'y rapporte. Ce qui semble indiquer que les activités extérieures aux réserves pourront être contrôlées62.

Ces exemples montrent qu'il est quelquefois possible, sinon aisé, de contrôler les activités extérieures aux aires protégées lorsque ces activités relèvent des autorités publiques ou s'exercent sur des parties du domaine public comme certains cours d'eau ou encore le domaine maritime. Il est donc probable que ce genre de réglementation ira en se généralisant parallèlement aux études d'impact qui en seront le complément indispensable. En revanche, il paraît beaucoup plus difficile en dehors des zones périphériques, d'imposer à des propriétaires privés des servitudes exhorbitantes au droit commun. Il en résulte qu'à défaut d'une réglementation appropriée, l'autorité responsable d'une aire protégée devra alors en général se pourvoir devant les tribunaux pour obtenir réparation d'un acte dommageable en invoquant les règles relatives aux relations de voisinage et les principes de la responsabilité civile63.

Il est cependant évident que si l'on veut assurer l'intégrité des aires protégées il faudra tôt ou tard trouver une solution au problème. Cette solution pourra être recherchée soit par la généralisation de l'application des procédures d'étude d'impact soit par l'adoption de législations appropriées permettant de réglementer toute activité susceptible d'avoir sur une aire protégée des conséquences contraires à l'objectif qui a présidé à sa création. Sinon l'ultime solution pourra encore consister en l'acquisition ou l'expropriation des terrains où des activités dommageables ont été entreprises ou sont envisagées. Mais c'est une solution coûteuse et souvent peu efficace ne serait-ce qu'en raison des délais inevitables qu'elle implique.
III. Les aires protégées devant le droit international

Etant donné l'importance de la préservation d'échantillons représentatifs des divers types d'écosystèmes ainsi que de populations viables du plus grand nombre possible d'espèces, on peut se demander s'il n'y a pas là la source d'une obligation pour les États de faire tout ce qui est en leur pouvoir pour assurer cette préservation. Jusqu'à présent cependant le droit international traditionnel n'a guère retenu cette obligation, bien au contraire, puisque écosystème et espèces continuent à faire partie des ressources naturelles nationales sur les- quelles chaque État exerce un droit de souveraineté absolu. En l'absence d'un traité mondial qui pourrait être générateur d'un nouveau droit, il convient alors de se demander si l'évolution récente du droit conventionnel et des principes non-contraints contenus notamment dans les résolutions des organisations internationales (soft law) ne constitue pas néanmoins la première étape de l'élaboration d'un droit plus contraignant.

1. Les conventions internationales

Les conventions internationales prévoyant l'établissement d'aires protégées peuvent être classées en trois catégories: les conventions qui se limitent à l'institution d'une obligation de créer des aires protégées, celles qui prévoient, en outre, un régime de reconnaissance internationale des aires protégées ainsi créées, celles, enfin, qui instituent un régime international de protection.

a) L'obligation de créer des aires protégées.

aa) Il faut d'abord mentionner un assez grand nombre de conventions dont l'objet est la préservation d'une espèce particulière ou encore d'un groupe d'espèces et qui contiennent presque toujours une disposition relative à la protection de l'habitat des espèces en question et par voie de conséquence, à la création de réserves. On trouve ainsi une disposition de ce genre dans la plupart des traités relatifs à la protection des espèces migratrices ainsi que dans les conventions ayant trait à la conservation de la vigogne, des ours blancs et des phoques de l'Antarctique. La nouvelle Convention universelle sur la préservation des espèces migratrices adoptée à Bonn le 23 juin 1979 et la Directive des Communautés européennes sur le conservation des oiseaux du 2 avril 1979 contiennent également une disposition de ce type. Tous ces textes se contentent de mentionner l'obligation de protéger des habitats ou de créer des réserves sans définir celle-ci plus avant.

bb) Les conventions relatives à la protection de la nature dans une région déterminée du globe utilisent encore largement la technique traditionnelle consistant à définir plusieurs catégories différentes d'aires protégées bénéficiant chacune d'un régime juridique précis. Ces conventions comprennent la Convention de Washington de 1940, déjà mentionnée plus haut, et qui a trait à la protection de la nature sur le continent américain, la Convention d'Alger de 1963 qui remplace pour l'Afrique la Convention de Londres de 1933, les "Mesures convenues pour la protection de la faune et de la flore dans l'Antarctique" prises en application du Traité sur l'Antarctique lors de la troisième réunion.
consultative des parties au Traité (Bruxelles, 1964) et enfin la récente Convention sur la protection de la nature dans le Pacifique Sud (Apia, 1976) qui n'est pas encore en vigueur70. Tous ces traités contiennent des dispositions comportant pour les Etats contractants l'obligation de créer des aires protégées. Ainsi l'article 10 de la Convention africaine de 1968 prévoit que les Etats contractants maintiendront et, si besoin est, agrandiront les réserves naturelles existant sur leur territoire et examineront la nécessité d'en créer de nouvelles afin de protéger les écosystèmes les plus représentatifs de leurs territoires et d'assurer la conservation de toutes les espèces.

b) La reconnaissance internationale des aires protégées

Il ne s'agit plus ici seulement d'une obligation générale de créer des aires protégées, mais bien de désigner nommément dans un traité, ou dans une annexe à un traité, des territoires protégés aux termes du dit traité. Il est certain qu'une telle méthode renforce considérablement la protection accordée à une aire protégée puisqu'elle exige de l'Etat qui désirerait déclasser cette aire, en totalité ou en partie, qu'il entame une procédure de radiation qui risquerait de donner de lui une image défavorable vis à vis de l'opinion publique internationale. Aussi est-il compréhensible que les Etats éprouvent des réticences à s'engager à ce point, et le seul exemple concret de l'application de ce système est contenu dans les "Mesures convenues" prises en application du Traité sur l'Antarctique dont une annexe énumère les territoires qui feront l'objet d'une protection spéciale.

Deux autres conventions utilisent une technique juridique différente et nettement moins contraignante pour atteindre le même objectif. Il s'agit de la Convention relative aux zones humides d'importance internationale (Ramsar, 1971)71 et de la Convention concernant la protection du patrimoine mondial adoptée par la Conférence générale de l'UNESCO en 197272. Ces deux conventions ne donnent aucune définition des aires protégées, n'énoncent que peu de critères relatifs à leur création et ne leur octroient aucun régime juridique particulier mais prévoient en revanche l'inscription par les Etats eux-mêmes des aires qu'ils désirent protéger aux termes de ces conventions sur des listes internationales. Il n'y a pas dans ce cas, certes, de véritable protection internationale, puisqu'un Etat reste toujours libre de retirer de la liste une aire protégée sans avoir pour cela à rechercher le consentement des autres Etats contractants, mais si l'obligation juridique est faible, l'obligation morale est sans nul doute considérable. Au demeurant, si l'inscription d'un territoire sur une liste reste facultative, dès qu'elle a été effectuée elle entraîne ipso facto pour l'Etat intéressé l'obligation de protéger le territoire ainsi inscrit.

Un troisième traité, la Convention conclue en 1976 à Moscou par les Etats-Unis et l'U.R.S.S. sur la conservation des oiseaux migrateurs et de leur environnement73 prévoit également l'établissement d'une liste des habitats ayant une importance particulière pour les espèces couvertes par la convention. Chacune des parties s'engage à protéger ces habitats contre toute activité qui leur porterait atteinte, y compris, par exemple, contre une pollution dont l'origine serait extérieure à la zone protégée. Comme dans les deux conventions précédentes, chacune des parties conserve la faculté de modifier unilatéralement la liste pour ce qui est des habitats situés sur son territoire. Mais cette convention
contient une autre disposition de caractère inhabituel et d’un intérêt certain. Il est en effet prévu que les autorités compétentes des deux parties peuvent d’un commun accord désigner et inscrire dans une annexe spéciale des zones d’importance particulière pour les espèces couvertes par la convention et situées à l’extérieur des limites de leur juridiction nationale. Cette liste ne peut être modifiée que si les deux parties sont d’accord pour le faire. En outre, chacune des parties s’engage à faire tout son possible pour que les personnes soumises à sa juridiction agissent à l’égard de ces zones en conformité avec les principes énoncés par la convention. Il serait ainsi possible à l’une des parties d’interdire à ses ressortissants de participer par exemple à l’assèchement d’une zone humide dans un pays tiers lorsque cette zone constitue un habitat important pour une espèce protégée par la convention à condition que cette même zone ait été inscrite dans l’annexe spéciale mentionnée plus haut.

c) L’institution de régimes internationaux de protection

aa) La neutralisation

Les traités relatifs à la démilitarisation ou à la neutralisation d’un territoire accordent en général une importance particulière à la préservation de la faune et de la flore et prévoient dans certains cas la création d’aires protégées.

Le Traité sur le Spitzberg du 9 février 1920 donne, en son article 2, compétence à la Norvège pour prendre les mesures propres à assurer la conservation de la faune et de la flore de la région. Ce traité ne prévoit pas la création d’aires protégées, mais la Norvège a procédé néanmoins à la création de plusieurs parcs nationaux en se fondant sur la compétence qui lui a été expressément attribuée par ledit traité.

Le Traité sur l’Antarctique prévoit certaines mesures de conservation applicable à la totalité du continent. Des dispositions plus détaillées figurent dans les “Mesures convenues” déjà mentionnées plus haut ainsi que dans les recommandations adoptées aux réunions consultatives des parties. Parmi les mesures prises aux termes de ces textes, la création d’aires protégées relevant d’un régime de protection spéciale apparaît comme un véritable système de zonage, à l’intérieur de la zone de protection générale constituée par le continent Antarctique lui-même.

Enfin un exemple récent et intéressant de neutralisation de fait réalisé par la création d’une réserve est celui de la petite île de Martin Garcia située dans le Rio de la Plata. L’article 45 du traité du Rio de la Plata (Montevideo 1973) conclu entre l’Argentine et l’Uruguay prévoit que cette île, qui reste sous la souveraineté de l’Argentine, constituera une réserve naturelle vouée exclusivement à la conservation et à la préservation de la faune et de la flore autochtones.

Il faut encore signaler qu’un projet de traité a été élaboré en 1971 par l’UICN aux termes duquel certaines îles, de grande importance scientifique en raison notamment du haut degré d’endémisme de leur faune et de leur flore, seraient démilitarisées, transformées en réserves et mises à
la disposition des hommes de science. Les Etats auxquels ces Mns appartiennent conserveraient cependant leurs droits souverains. Ce texte, qui n'est encore qu'une simple proposition, ne semble pas pour le moment avoir retenu l'attention des Etats intéressés.

bb) L'internationalisation

Il s'agit ici d'aires protégées qui ne relèveraient pas de la compétence d'un Etat particulier mais bien de celle de la Communauté internationale toute entière qui aurait en contrepartie l'obligation d'en assurer la gestion.

Il ne semble pas, cependant, que des Etats soient prêts, dans un avenir prévisible, à abandonner leurs droits souverains au bénéfice de la communauté des nations, c'est-à-dire, en fait, d'une organisation internationale dont le rôle ne peut, pour le moment, être d'administrer des territoires. En revanche, dans les régions du monde qui ne relèvent pas de la compétence territoriale d'un Etat, c'est-à-dire en haute mer, la création et la gestion d'aires protégées ne peuvent être qu'internationales. Or, en dépit de l'importance qu'il y aurait à protéger certaines zones d'un grand intérêt écologique, comme par exemple la mer des Sargasses, aucune aire protégée n'a encore été créée en haute mer. De plus, le projet de convention mondiale actuellement en discussion devant la Troisième Conférence des Nations Unies sur le Droit de la Mer ne contient aucune disposition à cet effet et une proposition de l'Union internationale pour la conservation de la nature et de ses ressources (UICN) prévoyant l'inclusion d'une telle disposition ne semble pas avoir, jusqu'à présent, été retenue.

c) Les aires protégées transfrontalières

Lorsque des aires protégées ont été établies de part et d'autre d'une frontière, c'est-à-dire lorsque le même écosystème se trouve partagé en deux parties relevant d'États différents, il semble évident qu'une gestion appropriée de l'ensemble ainsi protégé ne peut pas être réalisée sans une coopération bilatérale. C'est ce que prévoyait déjà la Convention de Londres de 1933. Malheureusement, en dépit du nombre assez élevé d'aires protégées qui ont été créées dans les régions frontalières, cette coopération semble difficile à organiser et les traités instituant une commission mixte chargée de la gestion de ces aires protégées d'intérêt commun restent encore très peu nombreux.

2. L'action des organisations internationales

a) La reconnaissance de l'importance des aires protégées

certain nombre de recommandations relatives à la préservation des régions naturelles, à la création de parcs et de réserves et à la recherche sur les écosystèmes.

En 1972, la Conférence des Nations Unies sur l'Environnement réunie à Stockholm adoptait une déclaration composée de 26 principes parmi lesquels les principes 2 et 4 revêtent en ce qui concerne la création d'aires protégées une importance considérable. En effet le principe 2 déclare que "des échantillons représentatifs des écosystèmes naturels doivent être préservés dans l'intérêt des générations présentes et à venir" tandis que le principe 4 précise que "l'homme a une responsabilité particulière dans la sauvegarde et la gestion du patrimoine constitué par la flore et la faune sauvages et leur habitat". En conséquence de ces principes plusieurs recommandations adoptées par la Conférence établissent les modalités des mesures de conservation envisagées.

b) Les programmes internationaux

En application des recommandations de la Conférence sur l'Homme et la Biosphère et de celles de la Conférence de Stockholm, l'UNESCO a lancé un vaste programme de recherche, de formation et d'action pour améliorer les relations entre l'homme et son environnement. Ce programme, appelé programme MAB (Man and Biosphere), comporte quatorze domaines d'action privilégiés. Un de ceux-ci, intitulé Projet 8 est entièrement consacré à la création d'un réseau mondial d'aires protégées appelées réserves de la biosphère, dont le but est la préservation d'écosystèmes représentatifs et de ressources génétiques, la recherche scientifique, la surveillance continue de l'état de l'environnement dans ces réserves et enfin l'éducation du public en matière d'environnement. Aux termes de ce programme les États désignent des réserves de la biosphère. Ces désignations sont ensuite soumises à l'approbation du Conseil de coordination du MAB. Mais étant donné qu'il n'y a pas de traité international régissant ce programme, ces désignations restent facultatives et leur approbation est dépourvue de tout effet juridique. Rien en outre n'oblige les États à accorder une protection aux réserves qu'ils ont désignées. Il a pourtant été reconnu qu'une protection juridique à long terme est indispensable si l'on veut que ce réseau de réserves puisse jouer le rôle qui lui a été dévolu. La reconnaissance d'une simple obligation morale de protection de la part des États intéressés ne paraît pas suffisante pour assurer aux nombreuses réserves de la biosphère déjà créées dans le monde (il y en avait 162 en septembre 1979 établies dans quarante pays et couvrant une superficie totale de plus de 100 millions d'hectares) le degré de protection nécessaire. En dépit de cette imperfection manifeste les réserves de la biosphère sont certainement appelées à jouer un rôle très important car elles constituent pour la première fois un réseau mondial et coordonné d'aires protégées qui ne peut être qu'appelé à se développer. Il convient en outre de noter qu'il n'y a aucune incompatibilité, bien au contraire, entre l'appartenance d'une réserve au réseau des réserves de la biosphère et son appartenance à tout autre réseau comme par exemple celui de la liste du patrimoine mondial.

Un autre programme international, d'origine encore plus récente, est celui du Conseil de l'Europe. Ce programme qui a pour but l'institution d'un réseau de réserves biogénétiques en Europe est considéré par les États qui l'ont adopté comme complémentaire de celui des réserves de la biosphère. Il se caractérisait,
toujours, par des conditions et une procédure plus contraignantes. En effet, aux termes de la résolution (76) 17 adoptée en 1976 par le Comité des Ministres du Conseil de l'Europe, ces réserves pour faire partie du réseau doivent bénéficier d'un statut juridique leur octroyant une protection à long terme, et la réglementation qui leur est applicable doit être suffisamment stricte afin de pouvoir prévenir toute action qui pourrait leur être dommageable. Elles doivent enfin être gérées conformément à des principes écologiques et les activités humaines doivent y être réglementées. Pour faire partie du réseau, une réserve doit être désignée à cet effet par un État membre. Toutefois, lorsque la désignation n'est pas conforme aux objectifs et principes énoncés par la résolution précitée ou lorsqu'une réserve déjà désignée a subi des modifications contraires à ces objectifs et principes, le Comité des ministres peut recommander à l'État concerné de retirer sa désignation. Tout comme dans le cas des réserves de la biosphère, les États membres du Conseil de l'Europe ne sont donc nullement tenus de désigner des territoires à inclure dans le réseau de réserves biogénétiques. Mais une fois la désignation faite, ils doivent, alors même qu'aucun traité ne les y oblige, suivre certaines règles, car s'il en allait autrement leurs réserves pourraient être exclues du réseau.

3. Les limites de l'action internationale

Il convient ici de se référer une fois de plus à la nécessité de préserver des échantillons représentatifs de tous les types d'écosystèmes et des populations suffisamment nombreuses du plus grand nombre possible d'espèces et se demander si cet objectif est réalisable dans l'état actuel du droit. Un tel programme comprend nécessairement une série d'étapes différentes qui ont toutes leur importance: il convient d'abord d'effectuer des inventaires d'écosystèmes à protéger. C'est là un travail scientifique qui a été entrepris et coordonné au niveau international et qui est en bonne voie. Des listes ont déjà été dressées dans le cadre du Programme biologique international et ce travail se poursuit sous les auspices du MAB. Certaines listes ont également été établies à l'occasion de projets distincts comme par exemple, la liste des zones humides du projet MAR. Un programme de classification des provinces biogéographiques du globe et des différents biomes qu'elles contiennent a également été entrepris et l'on s'est efforcé de vérifier dans quelle mesure ces biomes se trouvent déjà représentés dans les aires protégées existantes.

Enfin le Conseil de l'Europe est en train de mettre sur pied un système de fiches d'identification et d'évaluation des zones humides et des paysages naturels en vue de leur protection. Cette organisation va également procéder à un recensement des habitats à protéger dans le cadre du réseau européen de réserves biogénétiques et vient de définir, à cet effet, les différents types d'écosystèmes qu'il convient de protéger en priorité.

Vient ensuite le stade de la sélection. La nécessité de choisir des échantillons représentatifs des divers types d'écosystèmes semble bien établie tant par certaines conventions internationales comme la Convention d'Alger que par le programme MAB et celui du Conseil de l'Europe. Des conférences ont eu lieu en vue de déterminer les écosystèmes encore insuffisamment représentés dans les aires protégées existantes. Mais la décision de choisir tel territoire plutôt qu'un
autre dépend des États qu’aucune obligation internationale ne contraint encore à protéger les sites qui seraient prioritaires pour les hommes de science.

L’obligation de créer des réserves semble bénéficier d’ores et déjà d’une certaine reconnaissance en droit international. Cette obligation figure dans plusieurs conventions internationales et l’adhésion au réseau MAB ou à celui des réserves biogénétiques du Conseil de l’Europe constitue en fait sinon en droit une quasi-obligation. Malgré cela les États continuent souvent encore à faire preuve d’une grande réticence lorsqu’il s’agit de s’engager à créer des aires protégées. En effet, la Convention récente sur la protection de la nature dans le Pacifique Sud contient beaucoup plus de clauses échappatoires que les conventions plus anciennes. L’obligation de conserver les zones humides figurant dans la Convention de Ramsar est si faible qu’on peut à peine la considérer comme une obligation. L’idée d’une convention mondiale sur la protection de la nature et la création d’aires protégées, avancée déjà à plusieurs reprises, n’a toujours pas abouti à un début de réalisation. Enfin, et cela semble particulièrement significatif, la toute nouvelle Convention du Conseil de l’Europe sur la conservation de la vie sauvage et du milieu naturel ne contient aucune disposition relative à la création d’aires protégées, les États membres s’en remettant vraisemblablement au système du réseau de réserves biogénétiques nécessairement moins contraignant puisqu’il ne s’agit pas d’un traité.

En ce qui concerne la gestion des aires protégées il n’est pas certain que la formule consistant à se contenter de prévoir qu’une réserve doit être gérée conformément à ses objectifs, formule heureuse en droit interne surtout lorsque des mécanismes appropriés permettent un contrôle de cette gestion, ne soit pas cause de distorsions en droit international, chaque État interprétant cette obligation à sa guise.

Pour être certain de la bonne gestion d’une aire protégée il faudrait disposer de mécanismes de contrôle. Or ces mécanismes, hormis de simples obligations d’information ou de soumission de rapports, n’existent pas dans les accords en vigueur. La seule exception est le réseau de réserves biogénétiques du Conseil de l’Europe qui prévoit l’éventualité d’inspections sur les lieux ainsi qu’une procédure d’exclusion.

Pour assurer le développement harmonieux d’un réseau d’aires protégées, il semble indispensable de coordonner toutes les étapes précédentes. Or les institutions créées par les traités ou les organisations internationales n’ont en général ni les pouvoirs ni les moyens de procéder à une telle coordination.

Enfin, en contrepartie de l’obligation naissante de créer des aires protégées pour conserver des écosystèmes et des espèces intéressant l’humanité toute entière, il devrait nécessairement exister une autre obligation pour l’ensemble de la communauté internationale, celle de participer au financement de l’établissement, du maintien et de la gestion de ces territoires réservés ainsi que des travaux de recherche qui y sont entrepris.
IV. Conclusion

Si des progrès sensibles ont été accomplis ces dernières années dans la mise en réserve d’échantillons représentatifs des différents écosystèmes existants sur notre planète, il est certain que la partie est encore loin d’être gagnée et que des efforts considérables seront encore nécessaires pour éviter des destructions irrémediables. L’importance de la création d’aires protégées semble maintenant reconnue à peu près partout et certains pays disposent de législations modernes et d’institutions qui doivent leur permettre de réaliser sur leur territoire des réseaux de réserves aussi complets que possible. En revanche, l’existence d’une véritable obligation internationale ne semble pas encore suffisamment bien établie, de nombreux types d’écosystèmes continuent à ne bénéficier d’aucune protection et il existe encore un nombre important de pays dont la législation est soit inadéquate, soit insuffisamment bien appliquée pour donner aux aires mises en réserve le degré de protection indispensable. En l’absence d’une convention mondiale dont l’adoption parait toujours aléatoire, une coordination des efforts nationaux, permettant de déceler les lacunes des réseaux actuels et de déterminer les mesures prioritaires qu’il convient de prendre pour y remédier, parait indispensable. La stratégie mondiale de la conservation élaborée tout récemment par l’UICN semble à cet égard susceptible de jouer un rôle important. Encore faudra-t-il pour assurer son succès que chaque État mette sur pied ensuite sa propre stratégie nationale, et peut-être aussi chaque région ou chaque province sa stratégie régionale ou locale pour que de véritables plans d’action puissent voir le jour et que les richesses de la nature soient définitivement préservées. Mais pour cela l’établissement d’aires protégées, aussi nécessaire qu’il soit, ne sera pas suffisant car sans l’adhésion de l’opinion publique, sans sa vigilance, sans moyens d’intervention des associations de protection de la nature et sans une juste indemnisation des intérêts, souvent légitimes, qui peuvent se trouver lésés par la mise en réserve de certains territoires, la protection des écosystèmes et des espèces risque fort de n’être qu’illusoire.
Notes
1 Voir par exemple, Dorst, Avant que nature meure (Neuchâtel, 1965), pp 36-96; Greenway, Jr, Extinct and vanishing birds of the world (New York, 1958); Lieutaghi, L'Environnement végétal (Neuchâtel, 1972).
7 Cité dans rapport UNESCO, op. cit., n. 8, p. 13.
11 Convention relative à la conservation de la faune et de la flore à l'état naturel (Londres, 8 novembre 1933), 172 LNTS 241; Convention pour la protection de la flore, de la faune et des beautés panoramiques naturelles des pays de l'Amérique (Washington, 12 octobre 1940), 161 LNTS 193; Burhenne/Muecke, Recueil des traités multilatéraux relatifs au Droit de l'Environnement, (Berlin, 1972), no. 933: 33 et no. 940:76.
12 Convention pour la protection de la flore, de la faune et des beautés panoramiques naturelles des pays de l'Amérique (Washington, 12 octobre 1940), 161 LNTS 193; Burhenne/Muecke, Recueil des traités multilatéraux relatifs au Droit de l'Environnement, (Berlin, 1972), no. 933: 33 et no. 940:76.
14 Convention pour la protection de la flore, de la faune et des beautés panoramiques naturelles des pays de l'Amérique (Washington, 12 octobre 1940), Art. 1.4, Réserves de régions vierges.


En effet la plupart des difficultés relatives à la désignation d'habitats critiques ont pu être résolues à l'amiable entre l'"Office of Endangered Species" et les autres parties intéressées. Dans les rares cas où un différend a été porté devant les tribunaux, ces derniers ont donné raison au Secrétaire à l'intérieur. L'affaire la plus célèbre est celle du "snail darter" petit poisson d'eau douce appartenant au genre Percina, qui adonné lieu à un arrêt de la Cour suprême. Voir Bulletin de l'UlCN, nouvelle série, Vol. 9, No. 7/8 (Juillet-Août 1978).

Ainsi, aux États-Unis, il existe un réseau fédéral d'aires protégées, mais chaque état a également la possibilité de créer son propre réseau. En Australie, en revanche, les parcs nationaux relèvent des états.


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30 National Parks and Wildlife Conservation Act 1975 (No. 12 of 1975), Part II.
33 Voir cependant la Loi japonaise de 1972 (No. 85 de 1972), Article 22.1 dans Environmental laws and regulations in Japan, op. cit., n. 24, pp. n230 et seq.
34 The Wild Life (Protection) Act, 1972, Art. 35.5.
35 National parks and wildlife conservation Act, 1975 (No. 12 of 1975), Art. 7.9.
Voir également, Department of the Environment, Circular 108/77.
38 Loi fédérale du 1 juillet 1966 sur la protection de la nature et du paysage, article 6.
41 Countryside Act, 1968, Section 11.
42 Pub. L. 88.577, 16 USC § 1132 (d).
45 15 CFR, Part 922.
46 Il existe maintenant de nombreux exemples de ce type de législation: la loi américaine de 1972 sur les réserves marines. Marine Protection, Research and Sanctuary Act (Pub. L. 92-583) stipule ainsi dans son article 302 (f) qu'une activité ne pourra être autorisée que si, de l'avis du Secrétaire au Commerce, elle est compatible avec l'objet de la loi et avec la réglementation en vigueur pour ces réserves; en cas de doute les tribunaux apprécieront; la loi espagnole No. 15 du 2 mai 1975, relative aux espaces naturels protégés citée dans (1977) RJE, 92-97, contient dans ses articles 2 à 5 des dispositions très semblables.
48 National Parks Act, 1952 (1952, No. 54) Section 15, 26, 28.
49 Ibid. section 38.
50 C'est le cas en France où le Conseil d'administration d'un parc national a le pouvoir de "définir les principes de l'aménagement, de la gestion et de la réglementation du parc que le Directeur doit observer". Décret du 31.10.1961, article 14. (JO, 4.11.1961).
52 Le terme Parc national au Japon est utilisé, comme en Angleterre, pour désigner de simples paysages protégés.
53 Natural Parks Law (No. 161 of 1957), articles 17 et 18; Environmental Laws and Regulations in Japan, op. cit., n. 24, pp. 250-252.
55 Ibid. section 3 § 1, définition de la "Great Barrier Reef Region".
56 Ibid. sections 30 et 31.
57 Ibid. sections 32-33.
58 Ibid. sections 34 et 35.
60 National Parks and Access to the Countryside Act, 1949, section 20 (e).
62 Marine Protection, Research and Sanctuaries Act, 1972, section 302 (f). C'est là, en tout cas, l'interprétation qui a été donnée de ce texte par le Center for National Areas dans un rapport préparé pour la National Oceanic and Atmospheric Administration (NOAA) qui est l'organisme compétent, au sein du Département du Commerce pour administrer le programme des réserves marines. Ce rapport (Washington, 1977) contient un projet détaillé de plan de gestion de ce programme. Cette interprétation ne semble toutefois pas avoir été reprise dans le projet de réglementation relative à ce même programme qui a été publié par la NOAA au début de 1979 (15 CFR, part 972). Ce texte se contente en effet de préciser qu'un des éléments dont il conviendra de tenir compte pour fixer les limites d'une réserve est le risque que des activités humaines aient pour conséquence des dommages se produisant à une certaine distance du lieu de ces activités lorsque ces dommages sont le résultat du déroulement normal de ces activités ou d'accidents prévisibles. Il semble bien donc qu'ici la solution retenue, consiste en fin de compte, à étendre, le cas échéant, les limites de la réserve plutôt que de réglementer les activités extérieures qui pourraient lui porter atteinte.
65 Convention conclue entre la Bolivie et le Pérou pour la conservation de la vigogne, La Paz, 16 août 1969, art. 5. Le Chili et l'Équateur y ont adhéré par la suite; Burhenne/Muecke, op. cit., n. 11, n. 973:85.
66 Accord relatif à la conservation des ours blancs, Oslo, 15 novembre 1973 art. 2; Burhenne/Muecke, op. cit., n. 11, no 972:41.
67 Convention sur la conservation des phoques de l'Antarctique (Londres, 1 juin 1972); Burhenne/Muecke, op. cit., n. 11, no 972:41.
68 Convention africaine sur la conservation de la nature et des ressources naturelles (Alger, 15 septembre 1968); Burhenne/Muecke, op. cit., n. 11, no 968:58.
69 Mesures convenues pour la conservation de la faune et de la flore dans l'Antarctique. TIAS 6058; Burhenne/Muecke, op. cit., n. 11, no 964:41. Ces mesures ne sont pas encore entrées officiellement en vigueur car elles n'ont pas encore reçu l'approbation de toutes les parties au traité. Comme néanmoins les parties ont adopté et approuvé une recommandation aux termes de laquelle elles conviennent des s'efforcer d'appliquer ces mesures (Recommandation III-IX, TIAS 6053), on peut considérer que les mesures convenues sont applicables de facto, sinon de jure.
70 Convention sur la protection de la nature dans le Pacifique Sud (Apia, Samoa occidental, 12 juin, 1976); Burhenne/Muecke, op. cit., n. 11 no. 976:36. Cette convention n'est pas encore entrée en vigueur.
71 Convention relative aux zones humides d'importance internationale particulièrement comme habitats de la sauvagine (Ramsar, Iran, 2 février 1971); Burhenne/Muecke, op. cit., n. 11, no 971:09.
72 Convention concernant la protection du patrimoine mondial, culturel et naturel (Paris, 16 novembre 1972); Burhenne/Muecke, op. cit., n. 11, no 972:86. La procédure d'inscription sur la "liste du patrimoine mondial" comporte la présentation par les États au Comité du patrimoine mondial d'un inventaire des biens du patrimoine culturel et naturel situés sur leur territoire. Sur la base de ces inventaires le comité établit la liste
des biens qu’il considère comme ayant une valeur universelle exceptionnelle en appli-
cation des critères qu’il a lui même établis. (Article 11).

73 Convention entre les Etats-Unis et l’U.R.S.S. concernant la conservation des oiseaux
migrateurs et de leur environnement (Moscou, 19 novembre 1976), TIAS 9073.
74 Traité concernant le Spitzberg (Paris, 9 février 1920), 2 LNTS 7 et Burhenne/Muecke,
op. cit., n. 11, no 920:11.
75 Traité sur l’Antarctique (Washington, 1 décembre 1959); Burhenne/Muecke, op. cit., n.
11, no 959:91.
76 Traitado del Rio de la Plata y su frente marítimo (Montevideo, 19 novembre 1973),
Ministerio de Relaciones exteriores y culto de la Republica Argentina, Serie de tratados.
Publication no 278.
77 Voir en particulier à ce sujet: du Saussay, "Les aires protégées transfrontalières" (Docu-
ment présenté au 3e congrès de la Société française pour le droit de l’environnement,
Nice, octobre 1978).
78 Résolution 713 (XXVII).
79 Cette liste a ensuite été publiée par l’UICN sous le titre "Liste des Nations Unies des
parcs nationaux et réserves analogues". UICN, nouvelle série, No. 11 (Morges, 1967).
L’UICN a également publié un annuaire mondial des aires protégées: World directory of
national parks and other protected areas (Morges, 1975).
80 Conférence intergouvernementale d’experts sur les bases scientifiques de l’utilisation
rationnelle et la conservation des ressources de la biosphère, Paris 4-13 septembre 1968,
Recommandations No. 7 et No. 15.
81 La recommandation 38 en particulier recommande aux gouvernements de prendre des
dispositions pour désigner certaines zones représentatives d’écosystèmes d’intérêt
mondial, en vue de leur protection dans le cadre d’un accord international.
82 Voir les rapports du programme MAB et en particulier les rapports No. 12, Groupe
d’experts sur le projet 8: Conservation des zones naturelles et des ressources génétiques
qu’elles contiennent (Morges 25-27 septembre 1973); No. 22, Groupe de concertation
sur les critères et les lignes directrices du choix et de la constitution de réserves de la
de coordination du programme MAB: rapports MAB, No. 1, 10, 27, 38.
83 Voir à ce sujet: Conseil de l’Europe, document d’information relatif au réseau européen
de réserves biogénétiques, 19 mai 1977. Voir également document SNVS (77) 2 du 12
mai 1977 sur les aspects de procédure et les aspects institutionnels du réseau européen
des réserves biogénétiques.
84 Il faut citer ici certaines publications de l’UICN: "Biotic provinces of the world", IUCN
occasional paper No. 9 (Morges, 1974); Udvardy, "A classification of the bio-
geographical provinces of the world", IUCN occasional paper No. 18 (Morges, 1975).
85 La commission de l’UICN des parcs nationaux et des aires protégées a entrepris un
examen complet de la mesure dans laquelle les provinces biogéographiques terrestres
sont représentées dans des aires protégées. Voir "Second projet de stratégie mondiale de
la conservation", op. cit., n. 2 pp. 87 et seq.
87 Lamprey, "The distribution of protected areas in relation to the needs of biotic commu-
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document a été établi à l’intention d’une conférence régionale portant sur un système
coordonné de parcs et réserves en Afrique orientale (Seronera, Tanzanie, 14-19 octobre
1974).
88 En particulier à la Conférence technique internationale pour la protection de la nature
organisée par l’UNESCO à Lake Success en 1949.
89 "Second projet de stratégie mondiale de la conservation", op. cit., n. 2, pp. 27 et seq.
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I. Introduction: The Problem

The stage which pollution of the environment by chemical substances, in particular by organic chemicals, has already reached can best be assessed in relation to the increase in production in the chemical industry. Where as in 1950 the whole western world produced only seven million tons of organic chemicals, production in 1970 amounted to 63 million tons. In 1985, production volume is estimated to be 250 million tons. To these figures, lubricants and industrial oils at present in excess of 20 million tons must be added. Not only has the production volume of chemicals sharply risen but also more and more new sub-
stances are being distributed in commerce. Today there are more than four million known chemical compounds, of which about 70,000 are being marketed. About 190 chemicals are produced in volumes exceeding 50,000 tons. It is not known how many new chemical compounds are being placed on the market every year; the estimates vary between 200 and 2,000. These figures largely depend on whether or not derivatives are included in such estimates. Of the many chemical compounds which exist, we are only aware of some of their physical and chemical properties, such as the melting point. Testing has been largely confined to acute toxic effects. Comprehensive toxicological or ecological tests have not been undertaken. Moreover, very often the chemicals are not pure but contain small amounts of impurities which may be much more hazardous than the substance itself. Most of the chemicals are processed as mixtures or preparations the yearly production figure of which is up to one million. These mixtures and preparations may present new risks due to the combined effects of their components or metabolites.

More than three quarters of the raw chemicals produced are distributed in commerce. Two thirds of this number are manufactured to make products or preparations which can no longer be called chemicals, such as plastics, rubber goods and paints, but which may also present risks to human health and the environment. The remaining one quarter of raw chemicals produced generally goes to make solvents, refrigerating agents, brake fluids and detergents.

It is not known how many of the chemicals produced today enter the environment, but the proportion of chemicals which do so is no doubt considerable. It is probable that, at some point in time, all chemicals end up in the environment. Among the chemicals so dispersed, there are solvents like methanol, alcohol, chloroform, and aromatic compounds like toluene. Detergents, pesticides, gaseous raw chemicals, and also lubricants and industrial oils enter the environment in considerable quantities. Exact knowledge as to the dispersion of large quantities (i.e. millions of tons) of environmental chemicals does not often exist. To the total number of chemicals entering the environment must be added automobile exhausts and the emissions and effluents of industrial installations.

Taking these figures into account, it becomes clear that, with minor exceptions, environmental pollution is caused by chemicals entering the environment from sources in industry and commerce, by emission, disposal and accidental spills. Chemicals are also component parts of a large number of consumer products to which the general public is exposed in daily life. Similarly, workers are exposed to a wide range of environmental chemicals through their occupations in factories which produce, manufacture or use environmental chemicals.

Apart from spectacular accidental spills such as the disaster which happened in Seveso or widespread damage caused by processing or using a particular environmental chemical, such as vinyl chloride, asbestos, or kepone, there is little precise knowledge of the risk presented by the ever-increasing dispersion of chemicals in the environment. The low concentrations of chemicals, the long time interval between the first exposure and ascertainable symptoms of illness, and the fact that environmental chemicals in most cases only have sublethal effects make the detection of causal relationships extremely difficult. However, it is nowadays no longer seriously disputed that there exists for example, a causal relationship
between the increasing amount of pollution by chemical substances and certain organic cancers. Empirical investigations have proved that the incidence of such diseases is greater near chemical production centres than is generally found. Moreover, the life expectancy of men in most industrialised countries is at present dropping - in absolute terms - or does not compare favourably with the life expectancy of women, fewer of whom work. This confirms the assumption that the environmental conditions caused by modern chemical production and use raise an increasing number of health problems. Apart from problems of health, the ever-increasing dispersion of environmental chemicals and their metabolites raise ecological problems whose dimensions are for the most part unknown. Therefore, the control of environmental chemicals is becoming an urgent task for developed industrial nations.

II. Traditional Regulation of Environmental Chemicals

1. Controls over the use of environmental chemicals

In the past, the endeavours of industrial states to control environmental chemicals to protect human health and the environment focussed on the use made of such chemicals. Typical examples are provisions which restrict the emission or discharge of environmental chemicals into the air or water, regulate the disposal of environmental chemicals or products containing such chemicals, or control the exposure of workers to such chemicals at the place of work. Apart from the more comprehensive occupational health and safety legislation, attempts to control environmental chemicals are practically always limited to a few pollutants, often not even the most dangerous ones, such as dust, sulphur dioxide, carbon monoxide (air pollution) and oxygen-demanding pollutants (water pollution). Successes in reducing the amount of environmental pollution caused by chemical substances have often been achieved in areas in which the risks to human health and the environment were relatively small, while numerous other substances, some highly hazardous (e.g. carcinogenic ones), continue to enter the environment without much control. With the prevailing focus not being on the marketing but on the use of an environmental chemical, governments have seldom entirely prohibited the use of a substance; in general a government has used the technique of establishing standards, especially concentration levels, in order to control the environmental chemical.

Among the existing provisions there are also safety requirements aimed at the prevention of accidental spills in the production, transport or storage of hazardous substances. The emphasis is laid on controlling risks to human health, whereas the problem of simple ecotoxicity, particularly with respect to the regulation of transportation and storage, has not been given sufficient attention. It cannot be safely stated whether or not the existing safety requirements for controlling accidental spills in the chemical industry would have prevented a catastrophe of the magnitude of that which occurred in Seveso. It should be noted, however, that most industrial states have provisions aimed at the prevention of such accidental spills.
2. Isolated pre-marketing control of environmental chemicals

A control of environmental chemicals before their distribution in commerce (or even their production) has up to now not been provided for systematically, but only for some few chemicals or categories of chemicals. The initial concern has been with substances which may cause immediate death or serious physical injury to man, such as hard poisons and explosives. With economic development expanding and an increasing use being made of synthetic chemicals, less obvious effects have gradually become apparent. Therefore, other substances and mixtures were included in the preventive controls and the objectives of the controls were extended so as also to protect the environment. The control techniques are manifold. There are licensing and registration procedures, prohibitions associated with powers to make regulations covering the licensing of a substance, and general prohibitions which may be implemented by a regulation. Pharmaceuticals (in most cases including domestic animal Pharmaceuticals) are in general subject to such preventive controls. The same is true to an ever-increasing extent of food additives, cosmetics, tobacco products and various household products with which the human body may come into contact. While the emphasis with all these substances or products is on protecting human health, pesticides and to some extent fertilizers too are subject to preventive controls which aim not at only protecting human health but also at preventing long-term adverse effects on the environment, in particular by accumulation in plants, soil and animals and by synergic effects. Safety requirements differ. They are most severe in the control of Pharmaceuticals; the control of pesticides ranks second. In both areas either the producer or the licensing authority must undertake comprehensive tests on the health and environmental risks presented by a particular substance or mixture.

In conclusion, however, it must once again be stated that all these laws are rather isolated attempts at coping with the problem of health and environmental risks presented by chemical substances by anticipating these hazards before the marketing of a substance.

III. Comprehensive Regulation of the Marketing of New Environmental Chemicals

The increasing awareness that health and environmental risks posed by chemicals are a general problem of modern industrial societies and that our previous attempts to cope with this problem were rather incomplete has, since the beginning of the seventies, induced various western industrial nations to pass general legislation on the preventive control of environmental chemicals. This is true of the United States, Japan, Sweden, Norway, France, Canada, Denmark and - with some qualifications - Switzerland. Recently, the European Communities have issued a directive for the control of chemicals, and in the Federal Republic of Germany a chemicals control bill is before parliament.

1. Basic regulatory systems

Among the modern laws to control environmental chemicals three regulatory systems may be distinguished:
- notification and licensing procedures,
- notification procedures coupled with governmental powers to prohibit or restrict the production, marketing, and use of the chemical,
- primary responsibility of the producer coupled with governmental powers to prohibit or restrict the production, marketing, and use of a chemical.

These regulatory systems differ as to the extent of the government's power of veto over the production or marketing of a new chemical. The power of the government is strongest when an authority must decide in each particular case on the licensing of a new environmental chemical. It is weakest when the producer is only subject to a specific "obligation to take care" (beyond that existing under general tort law). Under the latter system, a comprehensive control of the marketing of new environmental chemicals is only ensured if the producers faithfully comply with the obligations imposed on them. Experience as to the extent to which this will happen is not available for the time being. Our experience with the behaviour of entrepreneurs in other areas would call for some scepticism. The remaining power of the government to intervene ex post facto is not very effective because the competent authority will often lack the necessary information about the health and environmental effects of the chemical. From a health and environmental point of view, licensing (and similar) procedures appear to be superior to all other regulatory systems. However, the dilemma in regulating the marketing of new environmental chemicals consists in the fact that there is not only a need for an optimal solution from health and environmental standpoints. The burdens imposed on the economy and on the administration by a chemical control law must also be taken into consideration. Our experience with the existing laws and their implementation shows that it is not possible to do everything at once. It is necessary to reduce the problem of chemicals control to a manageable size; the setting of priorities is indispensable. Whether this is done by drafting a particular law or in the process of implementing the law may ultimately make no difference.

It must also be noted that the differences between the various regulatory systems to control environmental chemicals are not rigid ones. The extent of the government's power of veto also depends on the definition of risk contained in a particular statute, the presence of the risk being a prerequisite for restrictions being placed on the production, marketing or use of chemicals (see below III 4). Other features of the law, especially the relevant procedure, may have as their effect that the theoretically stark distinction between a prohibition of production subject to licence (licensing procedures) and freedom of production subject to restrictions (all other procedures) fades away in practice. For example, a notification procedure subject to restrictions may de facto amount to a licensing procedure when, as in the United States, the period of time available for the evaluation of a notification by the agency is long and the agency has the power to prohibit or restrict the marketing of the notified chemical even for lack of sufficient information as to its health and environmental effects. Therefore, a preference for a given regulatory system on grounds of principle appears questionable.

2. Objectives and scope of preventive systems

With the exception of the Swiss Law on Poisonous Substances which is limited to the protection of human health (including occupational health and safety), all
other modern legislation on the control of environmental chemicals aim at protecting both human health and the environment. However, in the implementation of these laws, consideration of the ecotoxic effects of environmental chemicals lags far behind that of the effects on health; testing for environmental effects is still in the development stage.

The Norwegian law provides for a comprehensive control of all products liable to cause damage to health and the environment. But this is atypical. All other laws are limited in scope and cover chemicals alone. Some of them only regulate chemical substances liable to cause damage to health and the environment. Such a limitation hardly brings with it any advantages in the implementation of the relevant statute. For such a law must set out some general rules applicable to all chemicals (e.g. general reporting obligations) in order to be able to determine whether or not a given chemical is liable to cause such damage.

The inclusion in laws of mixtures and products containing environmental chemicals poses some problems. Often, the health and environmental risks presented by mixtures and products may be deduced from those presented by the substances which they contain. But this is not always the case. In particular, mixtures may have synergistic effects not present in the individual substances. New uses of old chemicals in products may, because of new patterns of dispersion or exposure, cause new risks to human health and the environment which hitherto have not been considered. As a matter of legal policy, it is therefore appropriate also to apply the control legislation to mixtures and to products containing chemicals, as the laws of the United States and Japan do. The problems of implementation, in particular in the testing and information obligations of the producer, which are associated with such an extension of the scope of the control legislation are difficult to cope with. However, the examples of the laws in the United States and Japan demonstrate that these difficulties can be overcome by choosing flexible solutions which avoid the imposition of too heavy burdens on the economy and on the administration.

Notification and licensing procedures generally apply to the placing of an environmental chemical on the market. Similarly, the producer's obligation to take care (beyond that of general tort law) pertains to this activity. Attached obligations of this kind are a legislative technique for anticipating health and environmental risks which may generally be caused by the later use (from the production to the disposal) of the chemical. They are an expression of the preventive approach. It is, however, doubtful whether using the date of putting a substance on the market is not already too late 3. A preventive control over environmental chemicals has the choice of several dates: that of the decision on a particular research and development project, the investment decision, and marketing. Economically speaking, the most favourable time for governmental intervention is that when the research and development decision is being taken. Here, loss of research expenditure, wrong investments and loss of jobs in the case of an environmental veto by the authority can best be avoided. The ecological benefits to be derived from early governmental intervention are also evident. Finally, it should be recognised that the resistance of the producer to governmental intervention will be less strong when far-reaching investment decisions have not yet been made. Legislation such as that in the United States and France which apply preventive control as early as at the production stage for environ-
mental chemicals come close to meeting these considerations. However, in the United States this regulatory principle is not implemented consistently because production and marketing for testing a new market remain possible.

Except for Norway, all modern environmental chemicals laws exclude from their scope certain chemicals which are already regulated by particular laws (in particular pesticides, Pharmaceuticals, fertilizers, food additives, and certain household goods). The exclusion of these environmental chemicals raises a problem: the risk criteria (i.e. the scope of statutory protection and the standards for assessing the risk) of these (for the most part older) laws are often less severe than those of the modern environmental chemicals control law. Such a legislative technique may frustrate the political goal of achieving a consistent preventive control of all new environmental chemicals. One way to solve this problem of legislative consistency is shown by France. Under the French chemicals control law the government is obliged to adjust the existing special laws to the new legislation.

3. Function of registers

The modern environmental chemicals laws make wide use of registers of chemical substances. Such registers can have different functions. Sometimes the listing in the register serves to distinguish old and new substances (see below IV). In other uses, the listing in the register is the formal expression of the administrative decision licensing and/or classifying the environmental chemical, and, in the latter case, restrictions or powers to restrict differentiated according to the risk category may apply (e.g. different labelling and packaging provisions). Finally, a product register may have the purpose of giving the authority a synopsis of all chemicals which are at present being marketed; here, the register has the function of establishing a “profile” of the chemical and related industries. Some legislation, in particular in the United States and Japan, provides for several kinds of register or combines several functions in one register.

A comprehensive register of all chemicals at present being produced (product register) may no doubt be useful as a basis for implementing the law. To this end, the producers would have to provide information about the substance which would go beyond providing a simple “profile” of the chemical and related industries; data concerning the uses of the substance, its dispersion in the environment and human exposure to it would be necessary. Such data is not required under the existing laws and regulations.

Experience to date on the establishment of such product registers shows that this is a time-consuming and expensive task which can apparently only be performed in several steps.

The listing of hazardous environmental chemicals alone in a register and their classification may facilitate the implementation of the relevant law, particularly where differentiated statutory restrictions are attached to the classification. One qualification seems necessary: powers to intervene should also exist with respect to chemicals which have not been listed and this is the case in all legislation that has introduced such registers.
4. Notion of risk

A crucial feature of a preventive control system over the production and marketing of environmental chemicals is the notion of risk. Two aspects of this problem must be distinguished: first, the law must determine which potential adverse effects of a chemical on human health and the environment have to be the object of tests undertaken by the producer or the authority. Secondly, the law must set out the prerequisites under which the licensing of a chemical may be refused or its marketing restricted. The assessment and testing obligation on the producer is not necessarily directly related to fixed risk criteria, but often only to certain properties, uses and potential effects of the environmental chemical from which the existence of a certain risk may be inferred; these will, therefore, be discussed later. As for the relevant criteria for agency assessment of chemicals and agency decisions on licensing or restricting the marketing of chemicals, one must distinguish between, on the one hand, the determination of the risk to human health and to the environment presented by an environmental chemical and, on the other, the evaluation of this risk in particular in relation to the benefits derived from the chemical.

Virtually none of the modern chemicals laws limits its application to ascertained real injury or damage to human health and the environment; in general, the laws extend to risk situations, i.e. the possibility or probability of harm. However, the notion of risk and the criteria used to make this notion operate in practice vary considerably. The notion of risk and its being put into practice in concrete cases often depends on the scope for judicial review of the interpretation of broad statutory terms and the exercise of governmental and administrative discretion; the general climate prevailing in the relationship between administration, the courts and the citizen may also exercise an influence. The American and the Canadian laws attempt to grant the authorities, by the formulation of the relevant risk criteria, a wide measure of unreviewable discretion, while, in spite of the often broader review powers of the courts, such a need is felt to a much lesser degree in Europe; the reason seems to be that, in Europe, access to the courts is more limited or that there are traditionally few legal controversies in this area.

The effectiveness of the regulation of environmental chemicals not only depends on the abstract formulation of the notion of risk, i.e. the necessary degree of probability of injury or damage to human health and the environment, but perhaps more on the concrete putting into practice of this notion. The question is whether and to what extent chronic toxicity, carcinogenicity, mutagenicity, teratogenicity, behavioural disorders and ecotoxicity must be considered and what the criteria are for determining whether the chemical presents a risk of causing them. The relevance of cumulative and synergetic effects, of accumulation and persistence of chemicals in animals and plants must be defined. It is evident that all modern chemicals laws must face considerable difficulties in making the notion of risk so concrete that it ensures an effective and reliable implementation of the law. Some attempts towards an appropriate putting into practice of the relevant risk criteria have been made in the United States, and indirectly in Japan and Switzerland. But, particularly with respect to ecotoxicity, there is a real lack of suitable criteria.
The question whether or not the production or marketing of an environmental chemical should be prohibited or restricted must be decided by evaluating the risk the chemical presents to human health and to the environment. In making this value judgment, it suffices in some laws that there is a risk as defined by the law; here, the notion of risk already contains the value judgment as to its acceptability. In other laws, the reasonableness of the risk is the crucial factor. In this context, divergencies exist in particular in the relevance of economic factors in evaluating the reasonableness of the risk. In the United States, but de facto also in Sweden, the authorities assess the reasonableness of a risk presented by a chemical not only on the basis of medical and scientific criteria, but also economic ones. In other words, they make a risk-benefit assessment. Whether the introduction of such decision-making criteria, rather complex as they are, is objectionable from a health or environmental point of view or acceptable as being a reasonable compromise, may be discussed theoretically. However, because of the limited experience of the new laws, this question cannot yet be answered definitely. Such a risk-benefit assessment poses no problems where a considerable risk presented by a specific environmental chemical is associated with a small benefit, for example where there are substitutes which are less harmful to health or to the environment. Such an assessment becomes much more problematic though, where a high risk is accompanied by a high economic benefit. In spite of these problems, an open institutionalisation of a risk-benefit assessment in the law for the control of environmental chemicals is preferable to an apparently strictly environmental notion of risk which pretends to exclude any evaluation of economic factors. As the Swedish example shows, the authority, in implementing the law, will in reality often be compelled to take economic considerations into account, even if the law does not provide for it to do so. Citizen participation and public discussion of agency decisions on the implementation of the law as well as judicial review of such decisions are more effective if the authority has no reason to hide the arguments for and against.

5. Information and testing obligations on the producer

As far as the information obligation on the producer is concerned, one may distinguish two systems: some laws require that, for the purpose of establishing a product register or generally in order to assess the health and environmental risks presented by the chemical notified, data be provided as to certain of its properties, the production volume and its uses. Other laws require - in addition - direct information about the health and environmental risk presented by the marketing of the particular chemical. The latter obligation is often, but not always, coupled with a testing obligation.

The testing obligation on the producer is the core of a modern regulation of environmental chemicals. By imposing upon the producer himself the obligation to test the health and environmental effects of a chemical before it is marketed or even produced, the state does not simply shift a burdensome obligation from itself onto the producer. The obligation on the producer to test tends to minimise economic costs as well as to compel the consideration of environmental criteria at an early stage, namely when investment decisions are being made.

Most, although not all, modern chemicals laws provide for obligations on the producer to test. In evaluating these obligations, one can safely say that a general
statutory obligation to test which is not implemented by a regulation and the fulfillment of which cannot be assessed by an authority will hardly cause the producer to make great efforts - beyond the traditional testing for acute toxicity - to obtain information about the health and environmental effects of a new chemical. Testing requirements are only useful in the framework of a notification procedure which enables the authority to check the test results and the reliability of the testing procedure.

Two regulatory problems are particularly difficult to solve: the first is the question whether all new environmental chemicals should be subject to uniform testing obligations and the second is how to make the testing requirements workable in practice. Both questions are to a certain extent interrelated in that a uniform testing obligation may, because of the enormous cost incurred by the testing of a new chemical, result in reducing the testing requirements. Most modern chemicals laws provide for uniform testing obligations. The counter model is a selective testing obligation whereby only chemicals suspected of presenting a high risk of injury to human health or the environment must undergo testing. The advantage of such an approach is that it keeps the expenditure of the producers concerned as low as possible. The regulatory problem associated with this approach can be solved. The American law shows that it is in principle possible to develop criteria and procedures for imposing such a selective testing obligation.

The singling out of particular new chemicals for testing purposes is not the only way in which selective testing obligations may be imposed. It is also possible to increase the requirements as to the intensity of the test in relation to the type and extent of the potential risk associated with a particular chemical. This is the gist of the "Stufenplan" (step sequence plan) for imposing testing obligations which are the basis of the recent control legislation of the European Communities. Every new chemical will be subject to a base set of tests which allows an assessment to be made of the most obvious health and environmental risk which could be presented by the chemical. These tests will include tests for acute and subacute toxicity and quick tests for mutagenicity and carcinogenicity as well as for selected ecological effects. Then there will be two further steps of more comprehensive testing in relation to the increase in production volume and other risk criteria, such as use pattern, group of population exposed to the chemical, area of dispersion, concentration and accumulation. Although a certain degree of arbitrariness in selecting the relevant steps is probably inevitable, it is submitted that such a regulatory approach is an optimal compromise between what is ecologically necessary and economically feasible.

6. Agency powers of assessment and intervention

A decisive test for the effectiveness of a chemicals control law is the veto power of the competent authority. This power largely depends on the power of the authority to assess the health and environmental effects of the chemical. The majority of the modern control laws only provide for an assessment to be made of the completeness and plausibility of the data provided and tests undertaken by the producer. In such a procedure the authority determines, on the basis of data submitted by the producer and other available information, whether, and if so which health and environmental risks are presented by the notified new
chemical. Only Japan has an entirely different regulatory system. Here, the producer is not obliged to test the chemical himself; testing is undertaken by the authority. It must be noted, however, that the competent testing institution is jointly financed by the government and by industry.

A legislative technique which seems to be well suited to the requirements of an effective control of environmental chemicals is the Japanese law which splits the agency assessment procedure into two parts: a summary assessment as to whether the notified chemical is clearly not dangerous, clearly dangerous or potentially dangerous, and a comprehensive assessment of potentially dangerous chemicals with assessment criteria which are at least partially capable of practical application and prescribed testing procedures. A similar procedure exists in practice in control legislation which provides for a short product ban after notification but grants the authorities broad powers to issue preliminary or final restrictions or grants them comprehensive assessment powers after the chemical has been put on the market. These latter provisions, however, suffer from the disadvantage that the authority cannot in general undertake its own testing. An optimal solution would be to provide that the authority has the power to undertake its own testing, even where there exists a comprehensive testing obligation on the producer, when this is necessary to assess fully the notified chemical. As far as the criteria for making preliminary decisions are concerned, not only the degree of uncertainty but also the type and extent of the potential risk should be taken into account.

On the basis of the assessment of the notified chemical, the authority decides whether or not to intervene against the production, marketing or use of that chemical. According to the type of regulatory system which exists, two kinds of regulations and regulatory powers may be distinguished: the licensing and/or classification of chemicals on the one hand, and restrictions on the production, marketing or use of the chemical on the other. As has already been described, the dividing line between the two systems cannot be drawn exactly. This is particularly true of the law of the United States, which, taking the statutory text at its face value, simply provides for a notification procedure subject to ex post facto intervention; for practical purposes, however, one may say that it comes close to being a licensing procedure.

The decision of the authority may take various forms. For instance, the licence may be limited to specific uses, maximum concentrations may be laid down; often the packaging and labelling of the chemical will be prescribed. Quite independent of the regulatory system there may be provisions relating to the use of environmental chemicals, for example to their application, processing, storage, transportation and disposal, and personal requirements, such as the requirement that a permit or notification is necessary for the production, distribution or import of such chemicals. These latter provisions often are directly laid down in the statute or may be promulgated by regulation. To this extent, the modern control legislation in part supplements the traditional rules which apply to specific uses of a particular environmental chemical. It must be stressed, however, that the focus of the modern control legislation is on the decision as to whether or not a particular environmental chemical may be put on the market in the first place.
The modern control laws often provide for regulatory powers to be available after a notified or licensed chemical has been placed on the market, such as reclassification, revocation of the licence, subsequent prohibitions and other restrictions. These measures can often even be taken if the authority revises its evaluation of the health and environmental risks presented by the chemical. However, it is not sufficient for intervention that another new chemical is being put on the market for which the risk-benefit evaluation is more favourable than for the chemical already being distributed. From an environmental point of view, the latter system would be preferable, although it cannot be denied that the legal and economic problems associated with such subsequent interventions may be considerable.

7. Authorities, procedure, sanctions

The administrative expenditure incurred in the implementation and enforcement of a comprehensive chemicals control law has often been underestimated. Conversely, it has become clear in the short history of implementing these laws that implementation can deliberately be delayed or prolonged by appropriating inadequate budgetary resources for the authority. Apart from budgetary policies, the unresolved scientific problems contribute in many States to the existence of considerable problems of implementation.

With the exception of the American law, participation by affected citizens in the decision-making process of the administration is not provided for. Moreover, private causes of action beyond those in traditional tort law only exist in the United States where everybody has a cause of action to apply for an injunction against a producer who does not comply with the law. The control of environmental chemicals is generally considered to be a matter for the authorities, not for citizens. As we have seen, the various risk criteria laid down in existing control legislation do not really predetermine the administrative decision as to the approval or prohibition of a particular substance, but rather are simple guidelines which leave the authority a wide degree of discretion. In making the decision, the authority can hardly count on a common understanding by the public at large as to the acceptability of a specific risk. Therefore, the structure of the decision-making process is of greater importance than usual. It would seem that the political implications of the decision on acceptable risk as well as its scientific premises require a certain degree of external input into the decision-making process in terms of factual information as well as of values and interests. This does not mean that the American adversary participation model is of necessity suitable for all nations. There are alternatives, such as an advisory model allowing for free discussion of pending decisions in the scientific community or a mixed scientific and institutional representative model which is aimed at achieving consensus 10. The crucial question is to what extent the taking of governmental decisions on the acceptable risk of chemical substances is subject to previous discussion in the political and scientific arenas.

IV. Regulation of Old Environmental Chemicals

Old environmental chemicals are seldom regulated in the same way as new ones. Sometimes significant new uses of, or new risks presented by, old chemicals are
subject to the same regulation as new chemicals. This approach requires rules or procedures by which one may determine whether a use of, or risk inherent in, an old chemical is new.

A general objection against the bracketing together of old and new environmental chemicals is that this would impose too heavy a burden on the administration immediately after the coming into force of the law. Japan has been able, quite successfully, to cope with similar problems (the establishing of a list of existing chemicals and the identification of those which are dangerous or suspected of being dangerous). Be that as it may, a pragmatic approach would be not to treat old and new chemicals equally, but at the same time not to limit the control mechanisms simply to new chemicals. This could be done by giving the authority powers to take selective measures vis-à-vis old chemicals and/or by introducing less onerous statutory obligations with respect to these chemicals.

1. Basic regulatory systems

When the chemicals control law does apply to old environmental chemicals, they are seldom subject to a notification and licensing procedure. An exception is the American law covering significant new uses of old chemicals, but the implementation of the relevant provisions has not yet been completed. As a rule, either old chemicals are subject only to subsequent intervention, or the specific duty of the producer to take care (beyond that existing under general tort law) also applies to such chemicals.

2. Information and assessment obligations of the producer

It does not raise serious regulatory problems to have producers of old chemicals subject to the obligation to provide data for the establishment of a product register (provided these chemicals are still being produced). To this extent, there is no relevant difference between new and old chemicals; only the possibility that the initial workload of the authority will become too heavy may justify doing without such an information obligation or postponing its introduction to a later date. Equally, the producer of old chemicals, as under American law, may be obliged to provide the authority with information about risks and actual injuries known or available to him.

There is no example of control legislation imposing on the producer of old chemicals a general obligation to test beyond the Swedish duty to take care. From an environmental point of view, it would seem appropriate to grant the authorities, as is the case under French and American law, the power to extend the testing obligation to old chemicals if certain conditions are satisfied. The criterion used under French law, namely that the use of the old chemical must present new risks is perhaps not sufficient. The better approach is that of the American law which obliges the authority (more exactly: an interagency committee) to establish a priority list of candidates for testing according to risk criteria set out in the law. Such a selective testing obligation avoids, on the one hand, imposing too heavy burdens on industry and the administration, and, on the other, enables systematic measures to be taken against old chemicals whose risk potential need not prima facie be less than that of new chemicals. From the point of view of environmental policy, there is no justification for entirely
abstaining from the regulation of old chemicals. Simply to establish a product register of old and new chemicals in order to facilitate agency intervention would not seem sufficient, unless the authority - as an alternative to a selective testing obligation on the producer - is obliged systematically to assess old chemicals suspected of presenting a high risk to health and to the environment.

3. Agency powers of assessment and intervention

Most chemicals control laws contain sufficient agency powers of intervention against old chemicals. Basically, the same restrictions may be ordered as for new chemicals. However, the effectiveness of these agency powers suffers from the disadvantage that neither is the producer obliged to test old chemicals nor is the authority able systematically to assess the risks presented by such chemicals. In view of the enormous number of existing chemicals, it is clear that such an assessment would also necessitate establishing priorities in the kind of risks to be considered. But completely abstaining from any testing of old chemicals overemphasises the significance of the control of new chemicals. This is unjustified because the risks presented by new and old chemicals are in principle the same.

V. International Implications of the Control of Environmental Chemicals

The modern chemicals control laws vary considerably in the kind and extent of controls exercised over the production, distribution and use of environmental chemicals. These laws apply to all new (sometimes also to old) environmental chemicals, mixtures and in some cases to products containing such chemicals which are put on the domestic market. Not only are domestic producers and distributors subject to the national chemicals law but so are importers of foreign-made chemicals, mixtures and products.

In view of the fact that among the OECD member States the volume of trade in chemicals and products made of chemicals exceeds 80 billion US dollars annually, it is evident that the application of national laws to importers may raise considerable barriers to trade. In the conflict between a more liberal and a more severe chemicals control law the latter will have a de facto superiority. But even where control laws with similar regulatory approaches apply, differences exist in the definition of substances, mixtures and products regulated by the law, the notion of risk, and the applicable test procedures. These differences have as their consequence that every producer of environmental chemicals working internationally must undertake expensive testing or go through a lengthy administrative procedure for each national market. Thus, the proliferation of chemicals control legislation may cause considerable, although not yet fully appreciable disturbances in the traditional trade flows in chemicals, mixtures and products. Moreover, a national chemicals control law may even be used as an instrument of national protectionism.

In view of this new threat to international trade, there have been discussions within the WHO and the OECD on an international harmonisation of the national chemicals control laws. The WHO recommended a mutual recognition
of test data. The OECD will establish six to nine working groups to discuss the possibilities for international harmonisation. Attention is being focussed on international agreement on uniform base sets of tests for all new chemicals, on good laboratory practices, confidentiality in the exchange of data and the definition of key terms of the relevant laws.

In spite of the optimism in official circles, the prospects for such a harmonisation are not good. Japan is far advanced with the implementation of its law and the United States is under political pressure to proceed with the implementation of its law as fast as possible. In this situation there is a real danger that when international agreement on a harmonisation has ultimately been reached this agreement may already be too late. Moreover, politically vital questions such as the notion of risk and the extent of the state's veto power are not amenable to international harmonisation. But these decisive features of any control legislation are interrelated with the topics which one attempts to harmonise at the international level. For example, the relevant test procedures which are to be harmonised also depend on the notion or risk set out in the particular law. Therefore, it is doubtful whether there is a good chance of achieving a degree of international harmonisation which will minimise the foreseeable disturbances in the international trade of chemicals, mixtures and products containing such chemicals.

VI. Limits of the Modern Legislation for the Control of Environmental Chemicals

The modern legislation for the control of environmental chemicals moves in what one might call a "magic quadrangle": the aim of the legislature is not only to protect against health and environmental injuries caused by chemicals, but also to keep the chemicals industry alive, not to erect unreasonable barriers to foreign trade and to avoid imposing too large workloads upon the administration. All the new laws amount to compromises which are not entirely satisfactory from a health and environmental point of view. However, it must be emphasised that a final judgment on the effectiveness of the new laws would be premature because there is not yet sufficient experience with them. But even today one can say that these laws do not tackle the fundamental problem raised by the ever-increasing dispersion of environmental chemicals, namely that the health and environmental risks presented by chemicals cannot really be assessed by analysing single chemicals alone. The real problem is the effects of pollution by all, aggregated environmental chemicals dispersed in the environment, i.e. the entire toxic situation ("toxische Gesamtsituation"). This problem can only be coped with if one gives the protection of health and the environment a greater priority in relation to the other interests contained in the magic quadrangle. As a consequence of giving such a priority to the protection of health and the environment, it would be necessary to no longer tolerate the ever-increasing growth in the production of environmental chemicals and the continuous discoveries of new chemical compounds. It would be necessary to limit the quantitative and qualitative growth of the production and use of environmental chemicals as such. The existing laws on the control of environmental chemicals are far from providing us with such a policy.
Footnotes

1 Idman, "Anticipating the Effects of Chemicals - an Evolving Concept", 5 Ambio 1976, 175-179 at 175.
2 Id.
5 Jänicke/Weidner, op. cit., n. 3, p. 728.
8 The step sequence plan was not contained in the original Commission proposal (see above n. 4); see Hartkopf, "Produktbezogene Anforderungen", 59 Umwelt - Informationen des Bundesministers des Inneren zur Umweltplanung und zum Umweltschutz 1977, 1-12, at 9.

9 Jänicke/Weidner, loc. cit., n. 3, 728/729.


I. Introduction

The problem of the disposal of solid waste on land is one with a respectably lengthy legal history. In many countries it was one of the earliest forms of environmental disruption to receive attention from the legislature, most commonly at a local rather than a national level. Thus, in the United Kingdom, local municipalities in the sixteenth century had already begun to regulate the
disposal of wastes, typically human and animal faeces, at least in urban areas. In the wake of the industrial revolution, the problem was greatly intensified by the hitherto unparalleled concentrations of large numbers of people into relatively small areas, creating a density of population which the previously existing resources of the localities concerned were totally inadequate to accept. Thus, during the nineteenth century, concern began to be felt, prompted usually by two considerations. Firstly, the intense overcrowding of people in ill-drained, ill-ventilated conditions promoted very efficiently the epidemic diseases such as cholera, which were the scourge of nineteenth century urban life, and secondly, the existence of so many people (many of whom were in a poor state of health and thus unable to support themselves) exercised a severe strain upon the welfare resources (such as they were) in the locality, with the result that the ensuing misery of the artisan population aroused, throughout the civilized world, a charitable movement, both moral and political, to eradicate the sources of this distress, typically on a national basis (or at least within the national framework) using a broadly defined legislative code as the typical instrument.

This lengthy history of legal, especially legislative, involvement, which is the experience of many countries, has produced a number of consequences which have had the effect of confining modifications of the law relating to the problem of solid wastes within their existing bounds (e.g. control of disposal rather than the stimulation of management programmes) and which have retained their force until comparatively recently. In some countries, the extension of the law to other aspects of the solid waste problem (hazardous substances, recycling, creation of new levels of programme-planning, etc.), has taken place, not within the context of the existing waste disposal law, but in new mechanisms introduced especially for the particular purpose of the extension. The result has been, therefore, not the integrated comprehensive treatment of all aspects of the problem, but a traditionalist, public-health based foundation onto which have been added other structures which have objects which are environmental in the wider sense.

Traces of this provenance still appear in the present laws, frequently in one of two forms. Firstly, the typical waste disposal laws are often geared primarily to the management and disposal of household wastes, and the machinery for dealing with other types of waste are grafted onto this foundation. Thus, in the United Kingdom and in France, for example, laws are expressed in this way. In some jurisdictions this feature takes the form of a duty imposed upon the competent authority in connection with the collection and disposal of household wastes (often in great detail)\(^1\), while the authority is merely empowered to make similar arrangements with regard to commercial or industrial wastes\(^2\). On the other hand, the German Waste Disposal Act of 1972 covers all kinds of waste (except some specific ones for which special legislation exists, e.g. radioactive wastes). The duty of disposal, however, may be differently regulated for household and other wastes. In some countries, special statutes have had to be enacted in recent times to redress the inadequacy of the laws relating to specially dangerous wastes, which tend to derive from industrial processes\(^3\).

Secondly, at least in the United Kingdom, "public health" origins have affected the interpretation of relevant statutes so as to confine potential operation. Thus, deposit on open land in an urban area of scrap metals has been held not to
constitute a statutory nuisance which was "prejudicial to health" upon the
ground that the Public Health legislation in question struck only at "an accumu-
lation of something which produced a threat to health in the sense of a threat 
of disease, vermin or the like".

1. Classification of wastes

Until recently, wastes were classified almost exclusively by reference to the 
source from which they originated rather than by reference to their chemical or 
other properties. Thus, as mentioned above, the commonest form of legal 
mechanism for dealing with wastes divides them into (usually) domestic wastes 
and commercial or industrial wastes. In some countries, additional classes or 
sub-classes are added - in France, for example, special provision is made for areas 
where the volume of waste is increased from time to time by tourism; and in 
Ireland, for wastes from mining operations.

In recent years, however, a trend has developed towards the classification of 
wastes with reference to their particular toxic or dangerous character. Thus, 
hazardous waste statutes exist, for example, in the United Kingdom, in 
Belgium, in Canada, France, and numerous United States jurisdictions. In 
Germany, a decree implementing the Waste Disposal Act contains a list of 
dangerous wastes for which additional requirements may be established. The 
substantive provisions relating to toxic, dangerous or hazardous wastes are dis-
cussed below.

2. What is understood by "waste"

National laws vary in their definition of "waste" from the extremely detailed to 
the perhaps deliberately vague. United States jurisdictions tend to include in 
their solid waste management statutes very complex definitions, like that used in 
Alabama:

"... non-putrescible solid waste (excluding ashes) consisting of both combus-
tible and non-combustible wastes. Combustible rubbish includes paper, 

The Alabama statute then provides detailed definitions of many of the con-
stituents of solid waste. For example, "rubbish" means:

"... non-putrescible solid waste (excluding ashes) consisting of both combus-
tible and non-combustible wastes. Combustible rubbish includes paper,
Similarly, "garbage" means:

" ... putrescible animal and vegetable wastes resulting from the handling, preservation, preparation and cooking of food, including wastes from markets, storage facilities, handling and sale of produce and other food products and excepting such material that may be serviced by garbage-grinders and handled as household sewage"\textsuperscript{17}.

So painstaking a definition section is by no means unusual in United States jurisdictions. A not dissimilar example occurs in California, except that included among the classifications are references to solid, semi-solid and liquid wastes and given as examples are industrial wastes, discarded home and industrial appliances, etc.\textsuperscript{18}, while in Indiana the term "rubbish" is expressly stated to include the rather nebulous category of wastes "that ordinarily accumulate around a home, business or industry"\textsuperscript{19}.

Some of these extensive definition texts contain unusual inclusions or exclusions. A good example of this is that contained in the appropriate Kentucky statute, which does not cover household wastes disposed of by the householder on his own land, but includes within a definition of waste radioactive material\textsuperscript{20}.

By contrast, the European pattern appears to be to define the area of the operation of the law in more general terms, as in France:-

"Est un déchet au sens de la présente loi tout résidu d'un processus de production, de transformation ou d'utilisation, toute substance, matériau, produit ou plus généralement tout bien meuble abandonné ou que son détenteur destine à l'abandon"\textsuperscript{21}.

In many countries, an intermediate position is adopted, and the exhaustive definition is abandoned in favour of a non-exclusive approach, as in the United Kingdom:-

" 'waste' includes -
(a) any substance which constitutes a scrap material or an effluent or other unwanted surplus substance arising from the application of any process; and

(b) any substance or article which requires to be disposed of as being broken, worn out, contaminated or otherwise spoiled,
but does not include a substance which is an explosive ..."\textsuperscript{22}.

Thus, it is clear that there is a trend away from the control of only those wastes of particular kinds, typically those which give rise to the threat of disease and so forth, which was the principal thrust of the traditional public health-oriented legislation, towards a comprehensive model for the disposal and, increasingly, management of all types of waste (even in some cases of difficult or dangerous waste) from all manner of sources.
3. Responsible agencies

The control of solid waste disposal has traditionally been a matter within the exclusive competence of the local government, and has not until comparatively recently become a matter of national involvement. This also stems no doubt in large part from the essentially parochial nature of early concern for the benefits of efficient waste disposal. Indeed, in broad terms it is still the case today that primary responsibility remains with the lowest levels of governmental structure although in some countries, such as France, provision is made for these small communities to band together to form a viable unit for the management of waste. In Germany, waste management falls, details varying from Land to Land, within the powers of counties (Kreise) or cities (kreisfreie Städte), only in particular cases within those of smaller municipalities.

In all the jurisdictions examined, this function is still left largely to local government agencies.

In recent years, however, there has developed a marked trend towards intervention in the field of waste management by agencies of local or regional or national governments. In some states, such as the United Kingdom, this intervention is concerned largely with waste disposal, but in most other jurisdictions examined the regional or national agency is involving itself in all aspects of management. Illustrative of this development is the United States experience. There, prior to 1965, the control of solid waste management was a matter for, at the most, state government regulation, without any Federal involvement, with the actual control over day-to-day operations being left to local bodies. In that year, with the passing of the Solid Waste Disposal Act, state governments became more active in respect of disposal and collection of wastes. This development was hastened by the Resources Recovery Act of 1970, by which the Federal government took upon itself one of the more usual responsibilities of national authorities in this connection by providing grants-in-aid in respect of state programmes. The making of the grants depended upon compliance by the state with Federal requirements, and most of the states passed new laws, some of which have been referred to above, in order to qualify for the Federal grants.

For the most part, the emphasis at this stage was on disposal, but some attention was paid towards the creation of collection regimes and the promotion of recycling. All the states have now appointed an agency of the government to take on responsibility for solid waste management and to liaise with the Federal government. The Federal government itself, most recently by the enactment of the Resource Conservation and Recovery Act of 1976 has itself intervened directly in influencing the level of state performance in the field, principally in the preparation (by the Administrator of the Environmental Protection Agency) of guidelines describing the performance levels necessary to protect public health and environmental values (such as the purity of groundwater and surface waters, air quality, aesthetics, etc.). Further, the Act provides for the institution within the Environmental Protection Agency of an Office of Solid Waste, which is to carry out the Administrator's responsibilities in respect of solid waste. These responsibilities as they are set out in the Act describe conveniently the types of assistance which regional and national governments are beginning to arrogate to themselves in connection with waste management, viz. co-ordination of research and development and studies concerning waste, provision of financ-
ing and other assistance to local authorities in the development and implement-
ation of their plans, co-ordination of consultations with scientific and other
bodies, provision of experts, etc.

This pattern has been reproduced in microcosm in many of the individual state
jurisdictions, with a state body supervising the proposed programmes and every-
day performances of local bodies. Thus, for example, California has a special
State Solid Waste Management Board, consisting of State Officers (Directors of
Health, Agriculture, etc.), appointees of the Governor (Councilmen from a city
of over 250,000 inhabitants, representatives of the public and the solid waste
management industry), further representatives of the public appointed by the
Speaker of the State Assembly having had education in natural resource con-
servation and recovery. Similarly, there is a State Solid Waste Management
and Resource Recovery Advisory Council with 25 members, including re-
representatives of the solid waste handling industry, public health officials, the
timber and agricultural industries, local governments, the public, etc. Similarly
review of local operations exists in other states. In the Federal Republic of
Germany, the Länder are supposed to establish waste disposal plans in order to
regulate waste disposal on a regional level. These plans have to indicate suitable
locations for waste disposal plants. The Länder should concert these plans
among themselves.

Neither of the European common law countries have proceeded to quite these
lengths of national intervention as in the United States. In the United Kingdom,
county councils (which approximate to sub-regional authorities, at least in some
cases) have been given responsibility for preparing a waste disposal plan for
their areas and the local (district) councils are obliged to deal with the county
authority, delivering to it most of the waste that they collect. There does exist
an advisory body (the Waste Management Advisory Council), set up in 1974, to
study the securing of the best use of resources, safe and efficient methods of
disposal, etc.

Similarly, the French law provides for the institution of a national agency for
the elimination and recovery of wastes.

4. Obligations laid on responsible agency

A corollary of national or regional intervention in waste management is that the
traditional tendency in such national statutes as existed to confine themselves to
empowering local authorities to undertaking collection and disposal has begun to
yield to the imposition of some kind of duty in this regard. Curiously, the
United States jurisdictions, despite the prevalence of intervention there, manifest
this traditional attitude to a considerable degree. Few states actually oblige
municipalities to collect the wastes themselves. Typical is the Alabama statute,
which simply authorizes the local authorities to make available to the public
collection and disposal facilities for solid wastes. It is provided that this may
include house-to-house collections or the placing of regularly serviced and con-
trolled bulk refuse receptacles within a reasonable distance (defined as generally
less than eight miles) from the furthest affected household.
In other countries, however, there has been a decided trend away from such a laissez-faire attitude to local powers. Thus, in France, for example, there are very precise duties as to the type and regularity of the services which the local authorities are to provide, together with equally precise variation for the tourist season, for bulky wastes, etc. Similarly, in the United Kingdom, there is a duty upon collection authorities to arrange for the collection of domestic and (if requested) commercial wastes. In Ireland, the same duty exists only at first remove. There, a sanitary authority only has a power to remove household refuse, but come under a duty to do so if the Minister for Local Government requires this to be done. In Germany, the competent local authorities are under a duty to collect and dispose of all wastes that are produced within their territorial jurisdiction.

The extent of this duty, where it exists, varies from state to state. Thus, in France, bulky wastes from houses and commercial wastes (including those produced by tradesmen) may be included, provided the amount and character of the latter permit them to be disposed of by the same processes as domestic waste. In the United Kingdom, the duty covers household wastes and commercial wastes (although a charge may be made for the collection of the latter - but not the former), but not to industrial wastes, in respect of which the collection authority is given, not a duty, but simply a power. Similarly, in Ireland, the collection of trade waste may be made dependent on the making of a reasonable payment by the producer of the waste.

5. Method of disposal

It is common for the waste management laws of American states to contain descriptions of the various methods of waste disposal permitted in the state. Typically, these include sanitary landfills, incineration, composting, and may contain additional regulations on these methods, e.g. prohibiting the grazing of animals on the sites of landfills.

Since the Resource Recovery and Conservation Act of 1976, the open dumping of solid waste is prohibited, although in some states the practice had been abandoned before, as inimical to human health.

II. Hazardous Wastes

In former times, all types of wastes were treated in the same manner, with no varieties being singled out for special treatment, except in the case of nuclear wastes (which have always been regarded as a separate category), this continued to be true until quite recently. Now, however, there is an almost universal tendency to identify certain types of waste as presenting such additional problems, whether in the processes required to dispose of them or in respect of the particularly serious environmental consequences which an escape may produce, as to make their management sufficiently different to merit some special legal mechanism. In some jurisdictions, for example in Alabama, there is an intermediate class of wastes which, although not regarded as hazardous in themselves, are nonetheless subject to regulations which stipulate the manner in which they may be processed.
Most states have sought to identify the wastes which they regard as requiring special treatment in a non-exclusive manner, defining them in terms of their effects on mankind, wildlife or the environment generally, rather than listing them or defining them in terms of their chemical or other composition or properties. So, for example, in France, there is recognized a class of wastes which:

..., dans des conditions de nature à produire des effets nocifs sur le sol, la flore et la faune, à dégrader les sites ou les paysages, à polluer l'air ou les eaux, à engendrer des bruits et des odeurs et d'un façon générale à porter atteinte à la santé de l'homme et de l'environnement ...,48.

More precisely, in Idaho, a substance is worthy of special treatment if, by itself or in combination with other solid wastes, it is infectious, explosive, poisonous, highly flammable or otherwise dangerous or injurious to human, plant or animal life49. In Kansas, the class includes substances which would cause a substantial present or potential threat to the environment "if improperly handled"50. In Iowa, amongst those substances included are those which are irritants or which generate pressure through decomposition, heat or other means51. On the Federal level, the Administrator of the EPA is required to list hazardous substances by reference to their toxicity, persistence and degradability in tissue, and "other related factors such as flammability, corrosiveness ..."52. In the United Kingdom, a more convoluted approach is taken, Criminal penalties are imposed in respect of disposal of wastes "likely to give rise to an environmental hazard"53, i.e. if the waste has been deposited in such a way or in such quantity (either by itself or with other deposits of the same or other substances) as to subject persons or animals (but not apparently plants) to material risk of death, injury or impairment of health or as to threaten the pollution of a water supply54. In California, a distinction is made between wastes which are merely "hazardous" and those which are "extremely hazardous", the former being those which may cause substantial personal injury, serious illness or harm to wildlife55, while the latter includes wastes which, if human exposure should occur, "may likely result in death, disabling personal injury or illness ..."56.

On the contrary, in Belgium, those wastes which are to be considered toxic appear in the text of the law itself57 in the form of a list which appears to be exhaustive and which defines toxic pollutants as those which are largely composed of or which contain more than a certain threshold of the listed substances. The packaging of such materials is also regarded as toxic waste.

There are a number of mechanisms which have been introduced to deal with these hazardous wastes, however defined. In a number of countries, certain dealings with such wastes must be notified to the appropriate authority. Thus, in Iowa, all spills of such wastes must be reported within six hours58. The Federal guidelines relating to the transport and treatment of hazardous wastes provides for a manifest system relating to them59. In the United Kingdom, the Deposit of Poisonous Wastes Act 1972 provides for local authorities to be notified when it is proposed to remove or deposit wastes to which the Act applies60. In France, a duty to provide full information is laid upon those producing, transporting or dealing with the wastes which have been classified as hazardous61.
In many jurisdictions, provisions (not usually mandatory) are made for separate treatment sites for specially hazardous wastes. Thus, in France, certain wastes may not be treated otherwise than in sites approved by the authorities. In Belgium, the disposal must take place either on sites where the wastes are produced or at specially approved sites. Similar provisions occur in other jurisdictions, e.g. California. Federal authorities are empowered to provide regulations for the occupiers of hazardous wastes facilities. In some places, e.g. Alabama, there is a formal requirement that such wastes be treated in wholly separate facilities.

In many jurisdictions, separate authorities have been constituted to deal with hazardous wastes management. In Belgium, for example, there is a special commission which has been instituted to determine applications for licences in respect of toxic wastes disposal centres. In the United States, it is common to find state bodies charged with the creation and supervision of comprehensive plans for hazardous wastes management, or at least providing advisory back-up.

Almost all aspects of dealings with hazardous substances are becoming regulated, usually by secondary regulations. This applies to their transport, labelling, packaging, etc. Particularly detailed is the Belgian text, which imposes strict controls, not only upon the sale, etc., of the substances, but upon their importation and acquisition, which can only lawfully be carried out by the disposal centres properly approved.

In all jurisdictions examined, licences are required to deal with hazardous wastes. There appears to be a trend towards the granting of these permissions at a national or, at least, regional level. Some of the licensing provisions are extremely strict, and in some cases extend not only to the location and construction of the site, but also to the personnel, who are required ab initio to be adequately qualified.

In some states, express provision is made for civil liability mechanisms, placing the liability on the person who carries on the activity producing the waste or who delivers it to someone other than an authorized disposer. In other jurisdictions, this liability is left to the general law. In Belgium, however, one of the documents which must accompany an application for a disposal centre licence is a contract of insurance covering civil liability.

Enforcement of the laws relating to hazardous waste, like all solid waste, are principally criminal in nature, although appropriate authorities are usually given powers to apply also for injunctive relief or its local equivalent. The Belgian text referred to, however, provides, in addition to all the other controls existing over toxic waste facilities, for further control to be exercised through supervision by the mayors and public health officials of the locality, together with some control through the health and safety at work inspectorate.

III. Disused Motor Vehicles

Many countries, especially in the common law world, have promulgated specific legislation to deal with disused motor vehicles. This may take the form of texts
which merely provide for regulation of the junk yards and scrap metal yards where these vehicles usually end their days. Thus, junk yards may be prohibited within 1000 yards of a major highway, unless they are screened by natural features, fences or plantings, or are in an industrial neighbourhood, or are not visible from the part of the highway on which most of the traffic runs.

Increasingly, the problem is becoming one of dealing with cars abandoned in the countryside and on public roads. Examples of legislation to deal with this matter are to be found in the United Kingdom and in some United States jurisdictions. The texts normally prohibit the dumping of motor vehicles where they are visible from a public place or a right of way or simply in “the open air.” The statutes usually contain a formula for presuming abandonment if it is reasonable to do so, or if certain criteria are satisfied, e.g. that the vehicle has no licence plate and is unattended for seven days, or that it is over five years old, can not move under its own power and has been visible from a public place for thirty days. The local authority is typically given power to remove and sell the vehicle, and the owner is liable for all costs incurred in this connection.

IV. Litter

In a number of jurisdictions, legislatures have intervened to prevent the thoughtless deposit of wastes incidental to usually leisuretime activities. In some countries, prior to the environmental movements’ heyday in the late 1960s, the control of litter represented the most developed area of law concerning environmental values, outside the public health related fields, and certainly litter control was one of the few environmental topics upon which public feeling became centred in the pre-environmentalist period, with legislation being enacted as a result of public pressure during the 1950s.

In many places, the terms of the solid waste disposal laws are drawn so widely (see supra) that the problem of litter can be dealt with under their provisions, but a number of countries have express codes to deal with litter under additional mechanisms.

The typical form of a litter statute is to prohibit the deposit of litter, except in approved receptacles, at least in prescribed localities, which may be a highway, public park or recreation area or simply places in the open air to which the public are entitled or permitted to have access. The enforcement of the statutes is usually by penal sanctions, and a number of states have faced the difficulties of determining the responsible person when litter is dropped from a car by providing that, where the actual culprit cannot be ascertained, the driver of the vehicle is responsible.

Penalties for littering usually take the form of fines, occasionally with an express provision for higher fines for subsequent offences or that the possibility of injury to humans or animals or damage to property should be taken into account when passing sentence. In other areas, driving or hunting licences may be suspended in addition to fines. It is not uncommon for courts to be given power to order, not only that the culprit abate this littering, but that he be sentenced to clear up litter for a specified period as a punishment. Some litter laws also provide for imprisonment, but the power appears to be little used.
V. Recycling

Texts promoting the recycling, or at least a more rational use of resources, appear to fall into two categories: first, those which set out to make unattractive certain forms of economic activity which squander resources needlessly, and secondly, laws which (usually in very general terms) confer powers (but rarely duties) on national or local authorities to promote the collection and reuse of materials. These will be examined in turn.

1. Disincentives

The prototype disincentive laws were those introduced, primarily in United States jurisdictions, to impose upon disposable containers some additional charge which did not apply to containers which were returnable. These “bottle bills” typically added a tax on the sale of the item contained in the offending containers often expressed as a “refund” which may be claimed when the container is returned \(^{103}\). In some places, forms of packaging part of which are detachable or can be thrown away are unlawful \(^{104}\), an approach sometimes extended to bottles which are marked “not returnable” \(^{105}\). On the whole, however, the use of disincentive measures seems to be slowing down, and there is evidence that, in some jurisdictions, legislatures are beginning to retrace some of the steps they have taken \(^{106}\).

2. Incentives

The classic form of government involvement in the promoting of recycling is not a direct one, but takes the form of supporting research projects carried on by the industries concerned (or by public authorities) and in assisting, particularly with funding and technical knowledge, in the institution by (usually) local authorities, but sometimes private corporations, of waste reuse programmes \(^{107}\). These powers are usually contained in specific statutes relating to recycling, conservation of materials or solid waste management \(^{108}\), but sometimes in statutes of more general application, relating for example to government aid to industries which, either because of their vulnerability to changing economic patterns or because of their location in areas where the government is anxious to increase investment, become eligible for national grants-in-aid \(^{109}\). In most advanced countries, considerable public awareness of the abuse of resources has come into existence. In many cases, excess packaging has been discontinued as a result of industry pressure, often generated by the threat of legislation. Further, the very amount of solid waste which is presently being dumped may, in some cases, place considerable strains upon the capacities of the solid waste facilities available, particularly in states with large populations living in a fairly restricted land-area. In such cases, the pressure on the disposal sites stimulates interest in recycling. Thus, in the United Kingdom, provision is made for the separate collection of different types of waste, although this remains a power rather than a duty \(^{110}\). There is, however, a provision excepting waste paper from the general duty laid upon the collection authority to deliver all its waste to the disposal authority \(^{111}\) and empowering specifically the expenditure by the collection authority of funds for the acquisition of reclamation equipment in respect of the waste paper \(^{112}\). Similarly, express provision is made for the use of appropriate waste as fuel in the production of heat and electricity \(^{113}\). The result
of the public concern over the millions of pounds worth of materials being buried or discarded, together with the fact that the recovery technology now exists, has prompted many governments to make available very substantial sums for the promoting of resource recovery. Thus, for example, in California, the solid waste statute provides that the state plan shall include provision for special studies and demonstration projects relating to the recovery of useful energy and resources from solid waste and mentions expressly, not only the traditional incentive/disincentive devices referred to above, but also to the desirabilities of changes in state policy (e.g. by encouraging state procurement of recycled materials) and the promotion of changes in manufacturing processes to reduce the amount of waste created at source.

In practical terms of objects actually achieved, however, it appears that recycling is an area in which governments are content to lead (to some extent at least) from behind. There is plenty of evidence of support and encouragement being lent by governments to research programmes and pilot projects, as there is of readiness by national governments to enable local agencies to involve themselves in the field. There is comparatively little evidence of more direct involvement by government; few examples exist of duties imposed in respect of resource recovery; the traditional pattern is for the government to make available advice or funds to an outside body, sometimes a university institute but frequently the industry itself to carry out the research and to make recommendations. What is less common is for those recommendations to be accepted and put into operation (other than in a purely informal manner) by the government which commissioned them. Pressure for advances in recycling are too frequently met by assurances that the subject is receiving attention and sympathy from the government, but proposals for positive action are too frequently blocked by concern that, in times of economic recession, the imposition of further burdens upon industry is unacceptable in view of the effect on economic performance or employment levels which may result.

3. Enforcement

Much the same conditions apply in connection with some aspects of the enforcement of solid waste disposal statutes. Almost all such statutes include provisions rendering it unlawful to dump or otherwise dispose of solid waste other than at a licensed site or by an approved method, and imposing a sanction (usually criminal) for contravention. On the whole, there is little evidence of widespread malfunctioning of the licence system. This is normally administered by the local or regional agency, which is accustomed to the administrative tasks involved in a licensing programme and is usually provided with staff who possess the technical skills required to investigate or validate the application data. Normally, the applicant is required to furnish the greater part of the relevant information necessary to enable the authority's staff to make the determination and all that is required is a fairly simple operation to ensure that the input received tallies with the authority's conditions. On the whole, it appears that this type of operation works well (to the extent that is a particularly startling achievement, at least once the mechanism has been constructed), and that the regulation of authorized tipping and other methods of disposal is adequate in broad terms.
There is some ground, however, for uncertainty as to whether effective control is exercised over illegal tipping by individuals at sites, or by methods which are not approved by the statute. Typically, enforcement of provisions aimed at this sort of activity is laid upon the environmental or public health officers of local or regional bodies, many of whom, in times of increasing restraint of public expenditure and mounting political opposition to further fiscal burdens (particularly among taxpayers and property owners, who are precisely the classes who are the paymasters of public services), are finding themselves increasingly short of staff, resources, training and finance even to carry out adequately the tasks presently allotted to them. In addition, recent preoccupation with environmental quality has frequently had the practical result of creating a plethora of new enforcement responsibilities borne by just these officers. Consequently, it is barely realistic to expect that all of these enforcement measures will be properly enforced, and it might be thought that the addition of further ones borders on the futile. If solid waste enforcement regulations are to be enforced uniformly (which they must be if a sound “polluter morality” is to be generated), then clearly one of two developments must take place; either, a new political will must be found which will counter or surmount the fiscal conservatism which represents one of the most potent political shifts of the 1970s or some more effective method of enforcement will have to be implemented (either by escalating penalties very substantially, including perhaps custodial or community service sentences, to impose directly some sense of personal responsibility for their acts on those authorizing the illegal tipping, or by the imposition of charges on production sites to fund abatement officers). These two methods may not be totally exclusive; indeed, a suggestion to taxpayers who consider themselves overburdened that a substantial financial return might be expected from the recycling of materials which are presently being illegally tipped might well result in considerable pressure for more effective regulation.
Footnotes

1 See e.g. Décret no. 77-151 du 7 février portant application des dispositions concernant les collectivités locales à l'article 12 de la loi no. 75-633 du 15 juillet 1975 relative à l'élimination des déchets et la récupération des matériaux (hereafter "décret no. 77-151").
2 See e.g. U.K.; Control of Pollution Act 1974 (hereafter "C.P.A. 1974") Part I generally.
4 Public Health Act 1936.
6 See e.g. this classification in C.P.A. 1974 at pp. 12,30.
7 Décret no. 77-151, art. 3.
9 D.P.W.A. 1972, to be repealed and replaced by C.P.A. 1974, Part I.
10 Arrêté royal du 9 février 1976.
11 Environmental Contaminants Act, S.C. 1974-5 c. 72; Ontario Environmental Protection Act 1971, Part IV.
12 Loi no. 75-633 du 15 juillet 1975 relative à l'élimination des déchets et de la récupération des matériaux (hereafter "loi no. 75-633"), esp. Arts 2.8.
15 Alabama Solid Waste Disposal Act (hereafter "Ala. S.W.D.A.") s. 1 (b).
16 Ibid. - s. 1(c). See also Kentucky Solid Waste Regulations (410 K.A.R. 2.010) which defines "putrescible" as "organic solid waste subject to decomposition by bacteria, fungi or oxidation ..." s. 1 (8).
18 Indiana Refuse Disposal Act, s. 2(3).
19 Kentucky Environmental Protection Law; Ky. Rev. Stats. Ch. 244-260; Solid Waste Regulations, n. 16 s. 1(8).
20 See sec. 1, Waste Disposal Act (Baden-Württemberg); sec. 1 Waste Disposal Act (Lower Saxony).
21 See e.g. Ala. S.W.D.A. s. 2(a); C.P.A. 1974 ss. 12-16.
22 The duties of the "disposal authorities" i.e. county (or sub-regional) authorities, are cast in such terms as to emphasize their tasks as to disposal rather than management.
23 S. 1008(a) (1) - (3).
25 S. 3001(2)(a).
27 Ibid. Art. 5 s. 66750.
29 Sec. 6 (Federal) Waste Disposal Act.
Ibid. s. 14.


Décret no. 77-151, Arts. 2-5.

By section 12 C.P.A. 1974.

Public Health (Ireland) Act 1878. s. 52.

Décret no. 77-151, Arts. 5-7. Note that local authorities in the United Kingdom are under a duty also to provide sites for the disposal of refuse by residents free of charge - Refuse Disposal (Amenity) Act 1978, s. 1.

C.P.A.s. 12(1), (2), (3), (4).

Public Health Acts Amendment Act 1907, s. 48.

See e.g. Ala. S.W.D.A. s. 1, 2.


No open dumping has taken place in Indiana since end of 1970.

See e.g. Alabama Solid Waste Management Regs. 1972 ss. IV(d) & (c).

Loi no. 75-633, Art. 2.

Idaho Solid Waste Regulations & Standards.

Kansas Solid Waste Law, K.S.A. 65-3402(0.

Iowa Department of Environmental Quality Act, Part IV, s. 1(1).

R.C.R.A.s.3001(a).

C.P.A. 1974 s. 3(3)(b), D.P.W.A. 1972, s. 1(1).

C.P.A. s. 4(5)(c), D.P.W.A. s. 1(3). Note that both statutes provide that the fact that waste is in a container does not of itself exclude risks which might arise if the waste were not so contained, C.P.A. s. 4(5)(b), D.P.W.A. s. 1(3).

Cal. H.W.C.A. Art. 2, s. 25117.

Ibid. s. 25115.

Arrêté royal du 9 février 1976, Art. 2.

Iowa Department of Environmental Quality Act, s. 6.

R.C.R.A. ss. 30002, 3004. See also Cal. H.W.C.A. s. 25513.

S. 3.

Loi no. 75-633, Art. 8. See also décret no. 77-974 du 19 août 1977 relatif aux informations à fournir au sujet des déchets générateurs des nuisances.

Arrêté royal du 9 février 1976, n. 3, Arts. 3 & 4.

Cal. H.W.C.A. s. 55121.

R.C.R.A. s. 3004.

Ibid. s. 25513.


Iowa Department of Environmental Quality Act, s. 3(2), Solid Waste Disposal Commission of Department of Environmental Quality.


See e.g. R.C.R.A. s. 3003; Cal. H.W.C.A. s. 25160.

See e.g. R.C.R.A. ss. 3002, 3003.

See e.g. R.C.R.A. s. 3002.

Arrêté royal du 9 février 1976, n. 3, Chaps. IV & V.

See e.g. Ibid. Chap. III; in France, loi no. 77-633, Art. 9. For other aspects of intervention on national level, see R.C.R.A. s. 3006, as to national approval of state programmes, and s. 309. In Germany, the licence requirement is not limited to the case of hazardous waste.

Arrêté royal du 9 février 1976, n. 3, Chap. VI.

See Lummert, p. 222 et seq.

Loi sur les déchets toxiques du 23 juillet 1974, Art. 7 (Belgium).

Loi no. 75-633, Art. 11.

80 See e.g. R.C.R.A. s. 3008 (USA); Loi no. 75-633, Art. 24 (France); Arrêté royal du 9 février 1976, n. 3, Chap. IX (Belgium); Cal. H.W.C.A. ss. 25180-25185 (California). See also Delmas-Marty, XXX
81 Arrêté royal du 9 février 1976, n. 3, Chap. IX.
82 See e.g. Indiana Junkyard Control Act 1967 as amended. Indiana Code Title 8, Art. 12, Chap. 1.
83 Ibid. ss. 4 & 5.
85 E.g. Indiana Abandoned Vehicles Act 1969 as amended.
86 Ibid. s. 3.
87 Refuse Disposal (Amenity) Act. 1978, s. 2(1).
88 Ibid. s(2).
89 Indiana Abandoned Vehicles Act 1969, s. 4(b).
90 Refuse Disposal (Amenity) Act 1978, ss. 3,4; Indiana Abandoned Vehicles Act 1969, s. 18.
91 Refuse Disposal (Amenity) Act 1978, s. 5; Indiana Abandoned Vehicles Act 1969, s. 6.
92 Nonetheless, litter itself is sometimes defined extremely widely. See e.g. Alberta’s Litter Act S.A. 1971, c. 61, s. 1(d) (iii); Indiana Anti-Litter Law 1969.
93 See e.g. Alberta Litter Act, ss. 2 & 3; U.K. Litter Act 1958 generally; British Columbia Litter Act, s. 4.
94 As in Indiana and Alberta.
95 As in the U.K. - s. 1 of 1958 Act.
96 E.g. in Iowa. Department of Environmental Quality Act, Iowa Code Title XVII Chap. 455B.97; in Alberta, s. 3(2) Litter Act (except where the vehicle is a bus).
97 See e.g. U.K. Litter Act, s. 1; Indiana Anti-Litter Law, s. 10-2605a.
98 As in Alberta - Dollar 50 - Dollar 10 for first offence rising to not less than Dollar 50 for third and subsequent offences, s. 7 Litter Act; see also s. 58 Ontario Environmental Protection Act 1971.
100 Indiana Anti-Litter Law, s. 10-2605a.
101 Ibid.; see also Alberta Litter Act, s. 7(2)(a); Saskatchewan Litter Control Act 1973, s. 4(4).
102 E.g the Indiana and Alberta statutes.
103 See e.g. Maine Beverage Container Law 16. Me.Rev.Stat. Ch. 28, s. 1863; British Columbia Litter Act, s. 3(1). See also Saskatchewan Litter Control Act, ss. 6-24. Cfr. on that matter Bothe/Gündling, Tendenzen des Umweltrechts im internationalen Vergleich (1978), pp. 29 et seq.
104 E.g. California Beverage Container Law; British Columbia Litter Regulations B.C. Regs. 136-70, s. 3.
105 British Columbia Regs., s. 3.
106 E.g. in Minnesota the requirement that non-carbonated beverage containers should have non-detachable caps has been deleted from the state law - 8 Environment Reporter, 666.
107 See e.g. R.C.R.A., s. 2003 obliging the EPA Administration to provide panels of experts to advise the States on the recovery aspect of their waste management plans.
108 E.g. R.C.R.A. California S.W.M. & R.R.A.
109 E.g. the U.K. Industry Act of 1972, s. 2 includes amongst the premises qualifying for government grants those used for “the recycling of scrap and waste materials” or connected research Grants may total up to 22% of cost.
110 C.P.A. 1974, s. 20. Many authorities do separate waste after collection, or arrange for separate collection, especially of paper.
111 Ibid. s. 14(1).
112 Ibid. s. 14(3).
113 Ibid. s. 21.
114 E.g. U.S. R.C.R.A.
117 A limited exception exists in Belgium in respect of toxic wastes. See Arrêté royal du 9 février 1976, Art. 8.

118 Some states require extremely detailed supporting applications, see ibid.

Changes in Civil Liability Concepts

by Rüdiger Lummert

The following article is based in part on a treatise on the "Rechte des Bürgers zur Verhütung und zum Ersatz von Umweltschäden" written jointly by the present author and Mr. Volker Thiem, who was then responsible for the chapter on the law of Torts. The treatise will be published shortly. Those passages which have been utilized are quoted with reference to the sub-chapters in the original manuscript.

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Introduction

Although since the early 1970s the attention of lawyers in the area of environmental protection has been aimed primarily at the formation of preventive environmental protection laws by means of a closed system of public law regulations, questions of compensation for environmental damage have retained considerable significance up to the present day. In addition to the undoubtedly pre-eminent problem of the future prevention of serious incidents, questions as to compensation for the resulting losses have arisen. The oceans and coasts have been repeatedly threatened or contaminated by oil escaping from tankers or drilling rigs. Numerous fatalities and serious illnesses have been caused by air and water pollution. In several cases, serious consequences could only be avoided by the outlay of considerable expenditure. To an increasing extent, however, types of damage are being recognized which are not the result of spectacular events, but rather the results of the "normal operation" of the industrial and technical installations, equipment and vehicles. The damage does not always affect people or property directly. It often causes changes in nature, in the landscape, in the climate, or in the quality of the air, the water and the soil.

Environmental damage may be distinguished from the sum total of legally relevant personal injury, property damage and economic loss by several typical characteristics. As far as single incidents of damage are concerned, the particular characteristics are: the unusually large extent of the damage, the large number of people affected, the large number of alternative or cumulative origins of the damage, the complexity of the causal relationships and the close connection between examples of damage and permitted economic activities which leads to complicated legal judgments as to fault and defences. In cases of long-term damage, additional difficulties present themselves in the determination of the causal relationships and in the gradation of annoyance, threat and damage.

In such cases the law of Torts has several tasks to perform. To begin with, it must provide fair compensation for damage caused to individuals, i.e., it must expect its members to bear certain types of damage themselves. As a secondary element, a preventive function is connected to the compensation function. By means of the obligation to provide compensation, the originator of the damage should be deterred from allowing damage to occur at all. In addition, the law of Torts also has an economic function. The costs of rectifying the damage caused by productive economic activity should be charged to the originator of the damage, thereby favouring those producers in the market who have avoided causing such damage (the polluter pays principle).

The law of Torts is one of the oldest branches of law. Over the course of centuries, and independent of one other, corresponding fundamental principles were developed in several legal systems which not only provided for society's requirements and legal relationships at the time when these principles came into existence but which also formed a suitable abstract basis for the solution of future problems. The law of Torts has, however, not participated in the rapid
development of environmental law which has characterized the recent history of public law. Thus, environmental damage is still primarily tackled in every country with the traditional instruments of the classic law of Torts. At the time when these laws were created, however, the specific characteristics of environmental damage were unknown. The law of Torts was conceived for particular legal conflicts in which a single person affected confronted a single individual tortfeasor. In such cases, the causal relationship between the tortious action and the damage caused could also be objectively determined. As a result of the gaps present in the original concept of the law of Torts and the particular characteristics of environmental damage, a number of problems of application have arisen such that inefficiency has been the effect. If, however, the compensatory function of damage compensation law is impaired, that law is also deprived of its secondary functions - the preventive one and the economic integration effect. The efforts being made to maintain and restore the efficiency of damage compensation law are described in the following sections.

I. Characteristics of the Law of Torts

Liability for environmental damage is, for the most part, a non-contractual one. It is to be viewed in the context of the law of Torts and is partly modified by particular rules concerning the legal relationships between neighbours, by the rights and duties of operators of industrial installations and by the liability of the State.

The law of Torts operates somewhat differently in the various legal systems of the world.

In Anglo-American common law practice, the law of Torts forms a particular segment of the system of private law actions. The types of action based on the court writs of the English case law system developed independently of one another with their own specific requirements and defences. As far as environmental damage is concerned, actions founded in negligence, trespass and nuisance are of particular interest. Of the three, nuisance plays the most important role. Here, an extensive body of case law arose which has developed from being applied to traditional conflicts between neighbours to its use in conflicts of modern industrial society. Over the years, additional actions have been developed such as the rule in *Rylands v. Fletcher* of 1868 which became a rule concerning strict liability for abnormally dangerous or "ultra-hazardous" activities.

In today's civil law systems of Continental Europe, predominantly statutory regulations on tort law exist in which a classification of various types of action has been virtually abandoned. In this respect, some guidance was provided by the general clause contained in Article 1382 of the French Code Civil of 1804, according to which every person is liable to pay compensation to repair damage caused by his fault. The liability is one based on fault (culpa rule). Additional provisions provide for strict liability in particular types of case.

Such a general clause was not included in the German Bürgerliches Gesetzbuch of 1900. A compromise was made between the types of action possible under
the "Gemeines Recht" and the general clause contained in the Code Civil. For personal injury and property damage, liability was fundamentally a limited one, based on the interference with certain specific legally protected interests\(^{18}\). For breaches of legal provisions which aimed specifically at the protection of another's interests and for cases of grossly culpable damage, liability was expanded\(^{19}\). Liability is based primarily on fault but in particular statutes strict liability may be imposed.

The German approach, together with the entire BGB, was adopted by Japan\(^{20}\).

In Scandinavian law, a strict separation of the law of Torts from criminal law was introduced relatively late. Up until 1972, the fundamental aspects of compensation in Sweden were regulated by the Criminal Code of 1864\(^{21}\). The basis of the regulation was liability for damage caused by violations of the criminal law, but the culpa rule was applied by the courts as an unwritten general clause relating to civil liability in general\(^{22}\).

Since 1972, Sweden has had a special damage compensation law (Skadestandslag) which, generally speaking, summarizes the regulations developed by the courts. Section 1 of the second chapter of the SkL contains a general clause on compensation for personal injury and property damage similar to that contained in the French Code Civil. Under Swedish law, compensation for purely economic loss can only be obtained if the criminal law is violated. The Skadestandslag is a legal framework which does not preclude the possibility of liability imposed under special statutes and customary law. There are special provisions concerning liability based on fault and strict liability in the Environmental Protection Law (§ 30) as well as a general principle of strict liability for dangerous activities\(^{23}\).

1. Liability based on fault

The traditional law of Torts is, at least in the legal systems of Continental Europe, closely linked to the concept of fault. In the Anglo-American system the concept of fault also plays a significant role; for example, in negligence actions and in the requirement of negligent or reckless conduct for liability in other actions. Formerly, in Continental legal systems, the view prevailed that fault was the constitutive element for liability - where there was no fault, there could be no damage\(^{24}\). With industrialization producing new and greater risks and complicated causal relationships, legal theory has moved away from the concept of fault and turned its attention to the concept of risk\(^{25}\). Liability based on fault has not been abandoned, but wide areas where it applied - depending on the extent to which strict liability came into play - have been withdrawn. Environmental law is, as will be pointed out later, strongly affected by this. And even in those countries where liability based on fault has remained, the concept of fault has not remained the same. In France, where, according to the wording of the law, liability is based on fault, the existence of considerable damage leads in practice to the conclusion that the defendant's conduct was negligent often without any discussion of the question of fault at all\(^{26}\). In the case of liability for damage caused by things (fait de la chose), the only defences allowed by the courts since 1914 have been force majeure (act of God), fait de la victime (contributory negligence) and fait d'un tiers (fault of a third party)\(^{27}\).
In the Federal Republic of Germany, the USA and Japan, consideration and proof of fault are facilitated by the duties of care construed by the courts, the legal presumption of fault in violations of legal or administrative rules (negligence per se) and res ipsa loquitur28. Consequently, similar results are in practice achieved as in cases of strict liability. The industrial polluter is required to ensure that no damage can result from his activity or, alternatively, to take all necessary steps to prevent such damage.

2. Strict liability

The development of modern industry has brought with it a large number of daily-occurring risks which for economic reasons cannot be avoided but which inevitably lead to injuries which the injured persons cannot reasonably be expected to bear without compensation. Starting with liability for railway accidents, risk emerged as a new concept of liability29. Since the middle of the nineteenth century, strict liability has been introduced in all countries, at least for particular types of cases, a large number of which are connected to environmental hazards.

The concept of strict liability is prevailingly understood as being an absolute responsibility linked solely to the causation of damage30. There are, however, statutory provisions and liability rules which require "illegal" or "unreasonable" conduct on the part of the defendant31. This is not quite reconcilable with the concept of liability for permitted yet dangerous activities. In this context they are nonetheless listed as examples of strict liability because of the absence of the requirement of fault.

Under the French Code Civil, strict liability of the "guardian" for dangerous installations, like liability for negligent conduct, was formulated in the form of a general clause32. A similar clause was introduced in the Netherlands33. In Germany only strict liability for animals was included in the Bürgerliches Gesetzbuch. Special statutory provisions based on strict liability were introduced concerning the harmful effects of rail, road and air traffic, water pollution, and the construction and operation of nuclear power plants34. Similar regulations exist in Switzerland, where the range of special statutes is somewhat broader35. In Sweden, § 30 of the Environmental Protection Act provides for strict liability in cases of substantial environmental pollution. This provision is supplemented by special laws relating to traffic and nuclear risks as well as to pollution of the sea by oil36. Moreover, the courts have developed a general principle of strict liability for "dangerous activities" which has made it possible to impose liability without written legal foundation37. In Japan, in the area of environmental protection, strict liability has been introduced by several special laws which, taken together, may encompass all relevant civil liability cases38.

At common law, the development of strict liability for abnormally dangerous or "ultra-hazardous" activities started with the case of Rylands v. Fletcher (1868)39. Apart from this, statutory regulations have been introduced in the United Kingdom and in the United States for animals, aviation, rivers and harbours and nuclear power plants40. In nuisance cases too - the most significant common law action in the field of environmental protection41 - there is no need to prove fault. Nuisance is a substantial interference with the use and enjoyment
of an interest in land. The defendant can, however, raise defences which, in the context of Continental European law, would amount to an exculpation. To recapitulate, then, it can be said that strict liability in environmental law is generally tending towards expansion. This applies to rules on liability in international agreements as well as in national legislation. A comprehensive strict liability system for environmental damage already exists in common law countries, in Sweden, Japan and, in practice, in France as well. Up until now, strict liability in the Federal Republic of Germany has only covered water pollution and radiation damage, but not air pollution and noise damage. In the latter cases, however, a claim for just compensation exists, regardless of fault, if unreasonable damage is inflicted upon the plaintiff which, having regard to the protected interests of the defendant, cannot be enjoined and which cannot be prevented by reasonable expenditure. All things considered fault in environmental legal actions now plays a subordinate role.

The extent of strict liability is somewhat different from that of liability based on fault both in the upper and lower limits of liability. As far as the lower limits are concerned, strict liability is imposed only where the injury is substantial. Such a requirement does not generally apply to cases of liability based on fault. In the United States, a distinction is also made in the range of remedies. So-called punitive damages, which exceed the actual amount of economic loss incurred, can only be imposed if the defendant's conduct was grossly negligent.

At the upper limit, the measure of damages in strict liability cases is sometimes limited to a certain amount of money, particularly when the liability is coupled with a compulsory insurance scheme or where a liability fund exists. The reason for this is essentially that the insurance market does not cover unlimited claims for compensation. Damages exceeding the given maximum are, under some statutes, covered by government guarantees.

In the sphere of environmental protection, a relatively large number of provisions imposing strict liability do not contain a limitation on damages, e.g., the Japanese laws regarding air and water pollution and the German Water Management Law.

II. Balancing of Interests and Tolerance Thresholds

The central problem concerning civil liability in the field of environmental protection is the conflict between divergent legitimate interests. On the one hand, there is the interest in freedom from environmental damage and, on the other, the interest in unhindered economic activity and development even when this results in unavoidable emissions. Here, civil liability has the task of protecting injured parties, but at the same time that of respecting the value of the defendant's economic activity.

1. Private law

The classic conflict (and where this problem first arose) is one between two neighbouring property owners each of whom uses his property in a way offen-
sive to the other. In this kind of conflict all legal systems have developed solutions which do not subordinate the interests of one party to those of the other, but rather provide for a balancing of those interests. The procedure involved in this weighing-up process differs somewhat in different countries. At common law, for example, the question as to whether a nuisance exists includes a determination as to whether the contested property use amounts to an “unreasonable interference” with the rights of the other party. Under German law, the balancing takes place within the further question whether the interference with the neighbour’s interests is unlawful. In the Japanese courts, before the new environmental protection laws came into effect, the question whether the defendant had taken due consideration of his neighbour’s and of the public interest was dealt with as a matter of fault. Despite the systematic differences fairly uniform criteria for the weighing-up process have been developed. In several countries these criteria have been codified, in others, they have been developed by the courts.

A first requirement in a nuisance case is that the interference with the neighbour’s interests be a substantial one. The standard for determining whether an interference is substantial is judged by reference to the standard of the “normal person in the community”. Subjective aspects such as individual taste or specific vulnerability receive as little consideration as do age or illness. On the other hand, a particular sensitivity may be taken into account when it is objectively related to the particular property use.

A further criterion which is generally applied in the balancing of interests is the compatibility of the property use with local conditions. Whether offensive emissions from an industrial activity are to be accepted or not will depend, among other things, on whether the property use is consistent with the character of the locality. What might constitute a nuisance in one place might not necessarily do so in another. Generally speaking, it is not decisive that the polluter or the person suffering the pollution was first in the area. This is, however, a factor to be considered in the weighing-up process, as are the actual uses to which the neighbouring properties are put and the occurrence of similar emissions from other sources.

Another criterion is the reasonableness of the extent of the damage suffered or, alternatively, the reasonableness of the sum necessary to provide for abatement measures. In dealing with this question, technological and economic problems play a dominant role. In general terms, emissions are unlawful if they can be avoided by proven control technology and if such technology is economically feasible. As far as their details are concerned, the standards differ somewhat, at both the national and international levels.

In the USA, the standards demanded by the courts vary from that of the best technology currently in operation to the order that within a certain period of time new technology, not at present available, be developed. Japanese courts have made similarly far-reaching demands in particularly serious cases of environmental pollution. They have demanded that the best technology available in the world be used. Sweden also claims to have set up for itself an equally tough standard. In the Federal Republic of Germany the standard is that of the best technology the practical application of which has been sufficiently proven in
commercial operation. The economic feasibility of such technical devices is determined by whether an average healthy enterprise in the relevant industry can afford them.

To varying degrees, the weighing-up process also includes a comparison of the relative usefulness of the two activities involved. In some cases, American courts have come to the conclusion that no nuisance exists if the economic usefulness of an activity outweighs its harm to the environment. The case law has, however, never been consistent. Since economic usefulness and environmental damage affect different parties, several courts have refused to carry out such a balancing of interests for social reasons. If this were not the case, a small neighbour would never be successful against a large enterprise. The tendency before American courts has been to disregard the size of the offending enterprise and the number of its employees when deciding whether or not a nuisance exists and to consider this only with regard to the question of the remedy to be given (damages or an injunction).

2. Public law

Apart from the duties arising from the legal relations between neighbours, environmentally harmful industries are also subject to a number of public law duties. To a certain extent, these duties are identical with the interests involved in the protection of the neighbourhood. They differ from them, however, inasmuch as they concern public health, nature protection, water management or other considerations of a political or economic nature. The question is thus also raised whether such duties extend or reduce civil liability.

Public law duties have their basis in air and water quality standards, performance standards, statutes and administrative decrees, as well as in the conditions and limitations under which governmental or administrative permits are granted. In almost all legal systems, breach of such regulations is viewed as being a strong indication that a tort has been committed and consequently raises the question of liability for the damage resulting. Nevertheless, in most countries civil liability is not avoided by the mere fact that the offender observed the public law regulations. Particularly in the United States the view has developed that the legal authorization to perform an activity does not include the authorization to cause damage to others, and the courts will accordingly examine whether that authorization exactly covers the activity responsible for the harm. The situation in the Federal Republic of Germany is different. The operation of a permitted or suitably located plant is a defence which precludes the grant of an injunction and restricts the possibility of damages to the amount exceeding the tolerance limit. In cases of "unreasonable" nuisance, the injured party is granted a claim for "just compensation" (Entschädigung) instead. This is similar to the compensation available in cases of takings of property, or of eminent domain.

Although administrative law for the most part leaves private law claims untouched, it still retains a degree of influence upon the outcome of civil liability cases. To begin with, it applies to those cases where the legislator directly aims to exempt specifically permitted activities from civil liability. It also facilitates the interpretation of undefined legal terms - e.g., "best practicable means" or
“economic feasibility”. In addition, however, the provisions of public law contain value judgments which sooner or later make their way into private law. Even if zoning regulations, emission standards and technical norms do not directly affect the concepts of suitable location, substantial injury and reasonableness, they create actual conditions which change the content of these concepts. This may result in an advantage to the injured party if, for example, the public law standards will protect the ill and specifically vulnerable persons thus contrasting with the concern of private law for the concept of “substantial injury”; or if, in addition to immediate hazards, indirect threats, risks and annoyances are also incorporated in the regulation. However, there is a risk that the protection of legal interests could be weakened if the public law regulations and standards take greater account of the economic interests of the polluter. It appears likely that the growing number of public law regulations will increasingly influence the civil law in the future. Whether or not this will lead to a tightening up of liability standards will depend on the quality of the administrative rules.

III. The Remedies: Damages and Injunctive Relief

In most countries courts not only have the power to award compensation for damage suffered but may also prescribe abatement measures or, in extreme cases, may enjoin the activity as a whole. In deciding between these various remedies, however, public law regulations play a significant role. The shutdown of an installation causing pollution which even under private law regulations could only be achieved in exceptional cases involving severe health risks is virtually excluded in all countries as a possibility because of governmental permits or statutory provisions concerning its authorization. In such cases, the injured party is reduced to the possibilities of compensation for damage suffered or of abatement measures. In this respect, there are several differences at the national level. In Sweden, a governmental permit would preclude not only a claim for the shutdown of the whole enterprise but also any claim for abatement measures not expressly provided for in the conditions of the permit. In France, although claims for additional control measures are not precluded by law, the courts, by reason of the separation of powers, do not interfere in administratively established conditions. In the USA, the possibility of an order for abatement measures is not ruled out even when the enterprise has a governmental permit for its operation. The case law reveals a wide range of remedies. The courts also avail themselves of their ability to order a particular reduction in the environmental pollution and leave it up to the polluter how this reduction is to be achieved. In the Federal Republic of Germany, a claim for additional control measures is still permissible in cases of approved operations. In practice, however, it has been more common for administrative courts than for civil courts to issue such orders.

In all countries, noise or pollution control devices may be installed not only at the polluter's plant but also on adjacent properties affected by the emissions. In such cases, the neighbours are entitled to compensation for their expenditure.

If a permanent nuisance cannot be abated because of the governmental permit or because the costs of abatement measures are unreasonably high, the injured
party is usually entitled to permanent damages. If, however, environmental pollution is caused by accidental or temporary events, elaborate provisions requiring restoration of the status quo ante are allowed as a means of natural restitution. Moreover, it is a principle in many countries that generous compensation should be afforded where someone in the public interest is exposed to substantial harm. This concept is also the basis of the legal rules for compensation with regard to takings of property and eminent domain and these rules are, in some cases, also applied to questions of environmental protection. Under American law, several cases of incompatible uses of neighbouring properties have been resolved by the polluter or the person suffering the pollution moving to another area. Where this occurs, the one moving has been entitled to compensation from the other. In Sweden, a regulation is included in the environmental protection law permitting a property owner whose property has been rendered unusable because of a polluting activity, to demand that the property, or a part of it, be surrendered in return for compensation. In the Federal Republic of Germany, compensation may similarly be granted when a water use is approved in the public interest in spite of foreseeable injury to other water users. The same concept also forms the basis of the compensation rules in cases where the damaging activity cannot be enjoined because of the suitable nature of its location or because of a government permit.

Damages usually include monetary compensation for personal injury, property damage and economic loss. Medical expenses, costs of repair and the depreciation of the market value are also normally covered. Loss of profit is included as far as it can be ascertained but the mere expectation of profit is not. Certain restrictions have arisen in this area. For example, mental and aesthetic annoyance are not recognized in all countries as amounting to injury. Harm to the environment itself - ecological harm and the costs of repairing that harm - is compensated for only in a few typical cases as in the destruction of fishing grounds. If a polluting activity causes harm to nature and the landscape without directly affecting any party, virtually no claim for compensation will exists.

IV. Liability of the State

In addition to the liability of private persons and enterprises, the State may, under certain circumstances, be held responsible for environmental pollution. The increasing amount of government activity in the sphere of environmental protection lends particular weight to the question of the circumstances under which the State may be held liable.

Some States draw a distinction here as to whether the State takes part in business life like a private individual or whether it exercises sovereign functions. Others place greater weight on the distinction between the liability of the State and the personal liability of the civil servant involved. Still others grant the State a basic immunity from private law actions and only allow claims for damages in exceptional circumstances and under certain conditions. Although the various legal systems originally differed strongly in this area, they have more recently come to resemble one another. The fundamental rule which has to the largest extent been recognized is that the State assumes liability for
illegal conduct of its organs. To the extent that the State itself is the operator of installations or vehicles, it enjoys certain privileges when its activities serve the public interest. The situation is different, however, when the installations and activities of the government are linked to particular dangers and risks for third parties. In these cases, the liability of the State has often been set up as strict liability.

Of still greater interest is the liability of the State for illegal conduct in the granting of permits and in the control of installations causing pollution. For this kind of administrative activity, there exists, for the most part, liability based on fault. In some countries, the State intercedes on behalf of the civil servant whose conduct was illegal or negligent. In other countries, the injured party has an immediate claim against the public corporation. Today, this technical difference has virtually no practical consequences. The standards of fault are usually interpreted more generously in favour of the injured party than in other private law cases. In some countries, an objective breach of statutory provisions includes a presumption of fault. In others, a specific concept of "administrative" or "organizational" fault exists which is largely independent of individual intention or negligence. In a few countries, a general absolute liability exists. In this latter case, no fault need be demonstrated.

An important limitation on governmental liability occurs when a decision lies within an agency's discretionary powers. In the USA, all liability is excluded in such cases. In other countries, the political character of such a decision is considered within the examination of the question of fault and, at least for minor errors of judgment, liability is rejected.

Generally speaking, one can discern in most countries an extension of State liability. However, the emphasis here is on the harm which the State directly inflicts on the injured party. If the harm is caused by the conduct of a third party, State liability frequently gives way to other compensation possibilities. In a draft agreement concerning compensation for damage caused by transfrontier pollution published in 1976 by the European Council of Environmental Law (CEDE), State liability was also suggested for cases in which civil liability is precluded because of the existence of a governmental permit. The necessity for such a regulation appears doubtful, however, since, apart from in the Federal Republic of Germany, claims for damage compensation are never excluded by the existence of permits. And even in Germany compensation claims exist in this case which are no less effective than State liability would be.

Furthermore, an extended State liability could only exist if the granting of the permit was illegal. This requirement would probably seldom be fulfilled in damage compensation claims since the legality of permits can usually be determined by administrative courts before any harm actually occurs. Finally, the more significant problems are in practice due to installations and activities which, although they have been granted a legal permit, nonetheless cause environmental harm.
V. Selected Problems in Pursuing Claims

1. Burden of proof

In pursuing damage compensation claims, evidentiary problems continue to play a significant role. In environmental actions this is particularly so because of the complicated technical conditions. Air and water pollution damage does not always remain, rather it disappears within a short period of time. Single acts of pollution are therefore usually not provable. As far as continuing pollution is concerned, the problem here is that the adverse effects generally do not take place at the source of the pollution but rather some distance away where many causes of harm - either individually or cumulatively - come into play. Although the adverse effects of many substances contained in effluents and emissions upon human health, valuable property and flora and fauna are beyond doubt, the relationships between cause and effect in individual cases can often not be established. Even when it can be determined that someone has discharged dangerous substances into the environment and that those substances caused damage, the polluter still has a number of defences. He may claim that other people produce the same substance, that his own contribution is a minor one, that the injured party is particularly susceptible to the substance, etc.\textsuperscript{110}.

a) Proof of cause in fact

In all countries the injured party is theoretically responsible for adducing the evidence of those facts on which his claim of damage is based. This includes the causal relationship between the damaging activity and the resulting damage. However, the extent of the burden of proof and the rigidity of the requirements concerning the quality of the evidence vary. In all cases involving harmful environmental impacts the injured party must prove that dangerous substances were discharged into the environment. Adducing evidence of this may be difficult if the discharge was a minor or exceptional one. In normal circumstances, though, it should be possible to establish the emission. The situation is made more difficult when a plaintiff has to show a specific level of emission. This is the case if compliance with public law standards and administrative permit conditions will exempt the originator of the polluting activity from civil liability, as in German law\textsuperscript{111}. Since the injured party will not normally have access to the internal operating process of the polluting installation, he is seldom able to prove whether the standards have been exceeded. In this situation American law helps by shifting the burden of proof. If the polluter invokes a permit covering his activity under legal or administrative regulations, he must show that his conduct lies within the ambit of the authorization\textsuperscript{115}. In other circumstances, the burden may be lightened if the results of emission measurements, taken by the State or by a neutral party, are made available to the injured party. Such measurements are taken in many countries. The availability of the results is made difficult in some countries because of regulations relating to the protection of business secrets.\textsuperscript{113} A generous rule regarding access to administrative documents, such as that in the USA and Sweden\textsuperscript{114}, may substantially improve the position of the injured party.

The type and extent of resulting damage may also cause evidentiary problems particularly if the harm consists not in a direct interference but rather in a threat
or a risk. The central problem involving the burden of proof is, however, the causal link between emissions and the resulting injury. The problem is that although risks and causal relationships may be assumed with a certain probability, they cannot be established with total certainty\textsuperscript{115}, particularly where the accumulation of emissions from several sources leads to harmful effects. The various legal systems react to this difficulty with differently constructed types of relief which aim at shifting the risk of the unavailability of further evidence above a certain threshold of probability on to the polluter. The requirements of German air pollution and noise control law and French law are both relatively strict - both require proof of an actual cause in fact and hypotheses are not sufficient\textsuperscript{116}. Under German water law, on the other hand, it is enough if the plaintiff can demonstrate that a substantial amount of a dangerous substance capable of causing damage has been discharged\textsuperscript{117}. Under American and Swedish law, the plaintiff must show that there is a predominant probability that emissions will lead to specific damage\textsuperscript{118}. Japanese law allows statistical evidence which is based primarily on a time and place coincidence of pollution and injury\textsuperscript{119}. Austrian water law embodies the legal presumption that water pollution damage is caused by those persons or enterprises which, according to local conditions and the quality of their discharges, may be regarded as possible contributors to the harm\textsuperscript{120}. Here, conversely, no scientific evidence is needed to question the legal presumption. The proof of "improbability" is enough. The defendant industries in the Yokkaichi case, for example, could not simply exonerate themselves by claiming that the victims of industry-induced asthma were old, ill or heavy smokers. The court decided that causes other than the emissions discharged by the defendants had not been proved\textsuperscript{121}.

b) Proof of fault and legal defences

The plaintiff may have the same problem in proving fault on the part of the defendant as he has in adducing evidence of causality. It should be remembered, however, that the size of this problem has been substantially reduced since in environmental law a liability independent of fault has, to a large extent, been introduced. To the extent that fault still plays a role in liability issues, the possibility of prima facie evidence and legal presumptions exist almost everywhere in the world, leaving it up to the defendant to exonerate himself by means of rebutting evidence\textsuperscript{122}. Evidentiary problems may also be relevant in cases of liability independent of fault since here too the contributory negligence of the victim or an act of God (force majeure) may be legal defences.

Acts of God are recognized in all legal systems as being a legal exculpation\textsuperscript{123}. However, not every natural event amounts to an exemption from liability. Even heavy storms and rain are not generally recognized by the courts as acts of God. The tendency is to consider the growing possibilities of technical ways to combat natural events and to a large extent to exclude the defence of "act of God\textsuperscript{124}".

The defendant has the burden of proof regarding acts of God. In special provisions under Japanese environmental law, consideration of acts of God is left to the discretion of the courts.
Contributory negligence on the part of the injured party may reduce or nullify claims for compensation. In such cases the defendant must prove the negligence of the victim. French courts have, in a series of cases, found contributory negligence because the damaged buildings or property were in bad condition and because the damage could have been diminished or prevented altogether had the property been better maintained. On the other hand, the American courts have always refused to consider poor maintenance of one’s own property as amounting to contributory negligence in a nuisance case. Under German law, particularly in cases of exceptionally serious damage, the victim has the duty to warn the polluting party of the potential damage and to assist in the reduction of that damage.

The most significant problem relating to the question of proof of fault is, however, that the individual polluter cannot foresee the cumulative effects of his emissions when combined with pollution from other sources. Although under the environmental laws of many countries contributors to the same damage are held jointly liable, they may escape liability if their contribution, viewed individually, is harmless or negligible, and ignorance of cumulative effects was not itself a ground of liability. This situation may, of course, become very problematic for the injured party if the number of offenders is particularly high yet their individual contributions to the pollution rather small.

2. Procedural questions

In addition to substantive regulations, the procedural ways of pursuing claims are of decisive importance for the effectiveness of damage compensation law. The social distribution of environmental harm often has as its concomitant that a large number of injured parties in a relatively weak social position and affected by rather small individual contributions to pollution (small when compared to the total amount of environmental harm) come up against one or several large and economically powerful polluters. The unequal strengths of the parties, the uncertainty of success and the risk of high costs and fees can often discourage the injured parties from bringing their actions. Even when some plaintiffs are successful in court, they are only compensated for the damage which they have individually suffered, leaving unconsidered the damage to other parties and the total damage to the environment.

Various procedural instruments have been created to encourage the possibility of bringing actions and to take into consideration the harm inflicted upon people not themselves parties to the action, and the harm to the environment itself. In the United States, individual claims involving common questions of fact and law may be brought as class actions. According to the procedural requirements, a class action may be used to bring an action for the compensation of widely distributed damage, and it allows members of the class to bring the action on behalf of the whole class. In the area of environmental law, however, class actions are treated restrictively by the courts. Claims concerning widespread environmental pollution and involving millions of class members were rejected because of the fear that the courts might become overloaded. A U.S. Supreme Court decision requiring that each member of the class be claiming at least 10,000 U.S. Dollars for the federal courts to have jurisdiction considerably reduced the ability of class actions to concentrate small claims together and
selectively impaired their procedural significance\textsuperscript{134}. In actions for injunctive relief, however, there is no 10,000 U.S. Dollars minimum for class actions\textsuperscript{135}. A further method for improving access to the courts is the possibility of fee-shifting in public interest litigation\textsuperscript{136}, although this is only available where specific statutory authority for it exists\textsuperscript{137}.

The idea of concentrating together individual claims and, furthermore, the improved possibility of compensation for widespread damage also play a role in French procedural law. Certain associations are entitled, as "parties civiles", to assert collective claims for damage compensation in administrative and criminal proceedings\textsuperscript{138}. Where specific authorization has not been given, associations may still represent the interests of their members. Participation in criminal proceedings is also granted to injured parties other than associations. Thus, the procedural burden on private individuals is substantially relieved by investigations undertaken by the Attorney-General. This possibility theoretically also exists in other countries\textsuperscript{139} but it is not used to the same extent as in France.

One unusual procedure is that provided for by the Japanese rules for the settlement of pollution problems. Under a special law\textsuperscript{140}, a three-stage procedure of conciliation, settlement and arbitration was introduced to accelerate the resolution of pollution-related private law disputes. The procedure is informal at the conciliation stage, more formalized at the settlement stage and quasi-judicial at the arbitration stage. Court proceedings which are pending may be suspended until a decision is made regarding the causation or liability issue. In addition, the law contains organizational regulations for emergency situations.

Extrajudicial agreements - which also occur outside Japan - are often made between landowners or fishermen and industries which regulate the question of future damage\textsuperscript{141}. Unlike court procedures, they offer the advantage of faster compensation and avoid the risks connected with a legal action. The disadvantage with them is that, given the relative bargaining strengths of the parties, it is often the case that only very small amounts of compensation can be obtained\textsuperscript{142}.

\section{VI. Collective Compensation Systems}

While traditional liability rules primarily concern the legal relationships between individuals, collective compensation systems have been developed in the form of insurance schemes and funds to cover frequently occurring incidents causing uniform damage.

\subsection{1. Insurance schemes}

In most countries public or statutory health insurance systems\textsuperscript{143} exist which cover, among other things, pollution-related health injuries. A potential polluter is able to take out liability insurance thereby making his possible losses calculable\textsuperscript{144}. Such insurance systems, with few exceptions, only cover accidental events and not foreseeable permanent injuries or long-term effects\textsuperscript{145}. A synthesis of liability, health and accident insurance systems may be provided for
by national accident insurance schemes which replace civil liability in cases of certain types of injury\textsuperscript{146}.

2. Liability funds

Under a number of national and international regulations special funds have been set up to provide compensation for environmental damage. These funds are largely financed by contributions made by the polluters in question and they will, under certain conditions, afford compensation to the injured party without having regard to the actual causes of the damage.

The Brussels Convention of December 18, 1971\textsuperscript{147}, established a fund to provide compensation for oil pollution damage at sea. The main task of the fund is to create an extended liability to cover cases where the protection afforded by the Brussels Convention of November 29, 1969 is inadequate\textsuperscript{148}, and thus to improve the protection of victims. The fund is to be financed by contributions from oil importers calculated according to the amount of oil they transport and it provides for payments up to a maximum of 675 million Poincaré gold francs (approx. 45 million U.S. Dollar). Property damage, clean-up and preventive measure costs are covered by the compensation provisions but pure economic loss is not. Payment of compensation presupposes a connection with particular events which cause damage and which are covered by the Fund Convention. By a voluntary agreement of tanker owners a pool was formed as a transitional arrangement until the Fund Convention came into effect\textsuperscript{149}. Similar agreements have been made with regard to offshore operations\textsuperscript{150}.

In the USA, oil pollution funds relating to the pollution of Coastal waters exist in various states. The most comprehensive of these is the Maine Coastal Protection Fund\textsuperscript{151}. This fund provides compensation for economic loss and oil pollution damage of unknown origin. Other funds have been set up to cover clean-up expenses incurred by the government and do not cover third party damage.

Since 1970, a liability fund for injury caused by air pollution has existed in the Netherlands\textsuperscript{152}. The fund above all aims at improving the situation of the victim in cases where the identity of the tortfeasor has not been established or where compensation is difficult to obtain for other reasons. The amount of compensation is not strictly limited although claims may be reduced according to principles of equity\textsuperscript{153}. The fund does not pay compensation for damage covered by an insurance policy or for which an insurance policy could have been taken out. The restricted nature of the fund, the fact that it has not been widely publicized and the large amount of time involved in processing cases have meant that the fund has not been widely used to date\textsuperscript{154}.

In Japan, there exists a compensation system for pollution-related health injuries which provides compensation to the inhabitants of particularly polluted areas for the medical expenses involved in typical pollution-related diseases such as asthma and bronchities\textsuperscript{155}. This compensation scheme is financed according to the "polluter pays" principle by taxes on industry and partially by automobile taxes. Unlike the situation in the Netherlands, the Japanese fund is frequently used. The payments made, however, are generally small. In evaluating the
Japanese model it should be remembered that there is insufficient public assistance for health care in that country, and that this was possibly the reason why an additional system of compensation for health damage was created.

Since 1973, a compensation scheme relating to airport noise has existed in France which pays compensation to residents in the vicinity of Orly and Roissy airports. The compensation is payable in cases of noise protection measures being taken, change of residence or change in property use. The basis of the financing is an airline tax which is assessed according to the number of passengers transported. A considerable number of payments have been made from the scheme primarily to compensate for the purchase of property and the alteration of property use.

Conclusion

From the synopsis of the trends and developments described above, one may draw the following contours of modern civil liability rules:

Liability is no longer based exclusively on fault. Risk has already become the dominating concept. The idea of the risk of damage to the environment and of injury to persons and property is linked to every polluting activity, even if that activity is permitted by law and operated in compliance with legal and administrative provisions. Thus, there are good reasons for imposing strict liability on the polluter without having regard to his legal authorization to continue with his activity.

Given present social conditions, a certain amount of slight annoyance must be borne without compensation. That does not, however, rule out that aesthetic or mental annoyance may be a ground for liability. The tolerance threshold must be determined according to local, technological and economic conditions and vary accordingly. The traditional concepts of substantial injury, suitable location, technological and economic feasibility will, however, increasingly be influenced by new scientific findings as to risks and hazards from pollutants, by new technology to control pollutants and by new environmental quality standards and standards of performance created under public law.

By means of new knowledge and technological achievement, the polluter's ability to plead evidentiary gaps and acts of God will become obsolete. Major problems remain, though, with regard to damage caused cumulatively by polluters. The individual polluter is unable to prevent all the damage, nor can he be expected to pay all the compensation.

The appropriate instrument for improving on this state of affairs is primarily administrative law. Liability of the State for wrongful licensing or faulty supervision can provide the victim with an additional means of redress. Preferably, however, the liability should be imposed on the polluters themselves instead of using public funds.
Collective compensation schemes like insurance and liability funds are further possibilities for supplementing individual liability and for eliminating gaps in protection. Liability funds cannot completely replace individual responsibility of an identified polluter since the risk of high compensation costs is an important incentive for improved control technology. The calculable expenditure of relatively small contributions to a fund or insurance scheme does not necessarily offer an equal incentive. Prevention, however, is better than compensation.
Footnotes


3 This was the case when drums filled with toxic substances had to be recovered by divers from the vessel "Cavtat" in the Mediterranean Sea, see Frankfurter Allgemeine Zeitung of 24.4.1976; and when more than 600 drums containing toxic wastes were dug up in Teckomatorp in Sweden, see Ferm and Renberg, "An Industrial Cover-Up: The Case of BT Kemi", 7 *Ambio* 1978, 211; Koch-Vahrenholt, op. cit., n. 2, p. 294; Süddeutsche Zeitung of 12.10.1977.

4 A frequently-mentioned example is the threat to the ozone layer caused by aerosol sprays. See Schulz, "Synthetics, Latent Risks and Governmental Response: The Case of Fluorocarbons and Stratospheric Ozone", 5 ELR 50109.


7 700 persons had to be relocated in Seveso, Koch-Vahrenholt, op. cit., n. 2, p. 49; hundreds of victims were registered in the Japanese environmental pollution cases, Nomura, *loc. cit.*, n. 2.

8 Exact causal relationships between the emission of pollutants and injuries to health have not been demonstrated until very recently, see the report of the University of Düsseldorf to the Ministerium für Arbeit, Gesundheit und Soziales of Nordrhein-Westfalen for the preparation of an air quality implementation plan (Luftreinhalteplan Ruhrgebiet Ost), concerning respiratory diseases, (1979); see also Bryce-Smith/Mathews/Stephens, "Mental Health Effects of Lead on Children", 7 *Ambio* 1978, 192; Schlipköter, "Wirkungen von Luftschadstoffen auf Menschen", in: *Handbuch des Umweltschutzes*, München 1977, 2.6.1.


11 Cf. Thiem in: Lummert/Thiem, op. cit., n. 6, ch. 4 D. I.


14 Rodgers, op. cit., n. 13, p. 100.


16 The origin of a comprehensive rule relating to liability for fault may be dated back to the Roman "lex aquilia", created by Tribune Aquilius, 200 B.C., cf. Zweigert/Kötz, op. cit., n. 12, p. 265.


18 § 823 para 1 Bürgerliches Gesetzbuch (BGB); the protected interests are: life, physical integrity, health, freedom, property and other "absolute" rights.

19 § 823 para 2 and § 826 BGB.

20 Arts. 709 et seq. of the Japanese civil code.


22 Hellner, op. cit., n. 21, pp. 7 et seq., 71 et seq.; the same rules were also applied in Denmark, see Haagen Jensen, The Law and Practice Relating to Pollution Control in Denmark (Luxembourg, 1976) p. 47; Vinding Kruse, Erstatnungsrechten (2nd ed., Copenhagen, 1971), pp. 301-324; Bengtsson, "Nordisk Miljörätt, en översikt", Nordisk Utredningsserie 1976, 25, (Stockholm, 1976).

23 See p. 240 infra.

24 Jhering, Das Schuldmoment im römischen Privatrecht (1867); see Hellner op. cit. n. 21, p. 6.

25 Zweigert/Kötz, op. cit., n. 12, p. 310; Kötz, Deliktsrecht (Frankfurt/Main, 1976), pp. 150 et seq.; see p. 240 infra, especially n. 29 and accompanying text.

26 Girod, op. cit., n. 6, p. 80; Thiem in: Lummert/Thiem, op. cit., n. 6, ch. 4 C 2 a.

27 Zweigert/Kötz, op. cit., n. 12, p. 323; see op. 278 et seq., infra.


29 Prussian Eisenbahnordnung of 1838 and 1871, Swedish Järnvägsansvarighetlag of 1886 (§ 5 para 1); cf. Zweigert/Kötz, op. cit., n. 12, p. 311; Hellner, op. cit., n. 21, pp. 48 et seq.; a draft amendment and supplement to the West German liability law of 1967, having stated the inadequacy of liability for fault, continues: "Die Gefährdungshaftung rechtfertigt sich für Anlagen und Tätigkeiten, die bei dem heutigen hochtechnisierten Stand unserer Wirtschaft zwar unentbehrlich sind und deshalb zugelassen werden müssen, bei denen aber damit gerechnet werden muß, daß auch bei Anwendung der möglichen und erforderlichen Sorgfalt die von ihnen ausgehende Gefährdung nicht beherrscht und deshalb die Schädigung Dritter nicht vermieden werden kann." Referententwurf 1967, Vol. 2, p. 3; see also references in n. 25.

30 See also references in n. 25.

31 This is the case in France, the Netherlands and Italy, (see nn. 32 and 33 infra), in Sweden (n. 36 infra and accompanying text), Japan (n. 38 infra) and in the Common Law countries (n. 39 infra).

32 Art. 1384 Code Civil; apart from this provision there is only strict liability for aircraft owners and operators of cableways, cf. Zweigert/Kötz, op. cit., n. 15, pp. 3, 7, 9.
Art. 1403 para 1 of the Burgerlijk Wetboek. In Italy, however, strict liability rules are divided into special provisions for liability for animals, buildings and motor vehicles (Arts. 2052-2054 Codice Civile), aircraft (Arts. 965, 978 Codice della navigazione) and nuclear risks (Legge no. 1860 di 31.12.1962).

§ 833 BGB (1900); § 22 Wasserhaushaltsgesetz (1957); § 25 Atomgesetz (1959); § 33 Luftverkehrs gesetz (1922); § 7 Straßenverkehrsgesetz (1922); Eisenbahnhafterpflichtgesetz (1940).

Zweigert/Kötz, op. cit., n. 12, p. 321.

§ 5 para 1 Järnvägsansvarighetslagen (1886); § 6 Lagen om flottning i allmän flottled (1919); § 1 Luftfartsansvarighetslagen (1922); § 5 Atomansvarighetslagen (1968); § 3 para 1 Lagen om ansvarighet för oljeskada till sjöss (1973); cf. Hellner, op. cit., n. 21, pp. 116 et seq.

NJ A 1911, 574; cf. Hellner, op. cit., n. 21, pp. 122 et seq.


See n. 15; see also Zweigert/Kötz, op. cit., n. 12, p. 330.


Rodgers, op. cit., n. 13, p. 107; interferences with water uses are actionable under the respective water law doctrines, riparian rights (in England and in the eastern states of the U.S.) and appropriation rights (in the west of the U.S.); cf. Rodgers, op. cit., n. 13, pp. 163 et seq., Davis, "Theories of Water Pollution Litigation", (1971) Wisconsin Law Review 738.

E.g. the defense of "assumption of risk", cf. Rodgers, op. cit., n. 13, p. 134; Thiem in: Lummert/Thiem, op. cit., n. 6, ch. 4 B II 2.


§ 906 BGB; § 14 Bundes-Immissionsschutzgesetz (BImSchG).

See n. 54 infra.

A distinction is expressly made in § 30 of the Swedish Mijljsokysddlag (Environmental Protection Act); in Germany, liability under § 823 BGB requires no "substantial injury test"; at common law, non substantial injuries may be the subject of legal actions under the negligence doctrine; only in France is the requirement of "dommage anormal, grave, excessif" applicable regardless of fault.

62 Palandt/Bassenge, BGB (n. 28) § 906 comm. 3 b) bb); Erman/Westermann, BGB (6th ed., Münster, 1975), § 906 comm. 15; Engler, op. cit., n. 58,375; Lummert/Thiem, op. cit., n. 6, ch. 3 E.

63 USA: Rodgers, op. cit., n. 13, pp. 118 et seq.; see also text accompanying n. 76 et seq., infra (comparative law doctrine); Germany: BGHZ 28, 255; 29, 314 (317); 48, 98 (104); 54, 384 (388); 60, 119 (122); Abée, *Der negatorische Rechtsschutz gegen Immissionen von lebenswichtigen Privatbetrieben und Einrichtungen der öffentlichen Verwaltung* (Diss., Kiel, 1973); Papier "Immissionen durch Betriebe der öffentlichen Hand" in: (1974) NJW 1797; France: C.A.Toulouse 17.3.1970, J.C.P. II 16534 with an annotation by Despax; Girod, op. cit., n. 6, p. 164; Sweden: § 5 ML; § 136a Byggnadslagen (BL).

64 Madison v. Ducktown Sulfur Copper & Iron Co., 83 S.W. 658, 666, 113 Tenn. 331, 366 (1904); Rodgers, op. cit., n. 13, pp. 118 et seq.

65 Hulbert v. California Portland Cement Co., 161 Cal. 239, 251, = 118 P. 928, 933 (1911); Rodgers, op. cit., n. 13, pp. 118 et seq.

66 Rodgers, op. cit., n. 13, p. 120.

67 An important deviation of the U.S. Air Quality Standards from private law Standards consists in the consideration of effects on health on the old, the infirm, those afflicted with cardiac, asthmatic or bronchitic conditions - cf. Rodgers, op. cit., n. 13, p. 113; public law Standards may also provide a more exact determination of technological and economic feasibility (see n. 2 infra).

68 Nuisance per se or negligence per se: *Reserve Mining Co. v. U.S.*, 514 F. 2d 492, 8th Cir. 1974; Rodgers, op. cit., n. 13, p. 136 referring to a large number of cases; with regard to the UK, the reservation is made that public law provisions in the field of environmental law may generally not be enforced by private litigation - see McLoughlin, op. cit., n. 13, p. 9; Germany: In § 9 Fluglärmgesetz, Liability is tied to aircraft noise in excess of existing Standards; see also Baur, op. cit., n. 50, p. 650; Denmark: Haagen Jensen, op. cit., n. 22, p. 47; in Sweden, uniform Standards are applied both in private and public law, see Westerlund, op. cit., n. 53, p. 407.


70 For detailed references see Rodgers, op. cit., n. 13, p. 138. In some cases, however, statutory authorization was considered under the doctrines of preemption or primary jurisdiction, see Rodgers, ibid., at p. 137.

71 § 14 BlmSchG; § 906 BGB; this exemption does not cover accident-type events, but only "scheduled" emissions in connection with the regular Operation of a plant, cf. Kleindienst, *Der privatrechtliche Immissionsschutz nach § 906 BGB* (Tübingen, 1964), pp. 64 et seq.; Thiem in: Lummert/Thiem, op. cit., n. 6, ch. C II 2b; in the U.S. the Operator of a plant may be in a similar position if he has been granted the power of eminent domain, cf. Rodgers, op. cit., n. 13, p. 108.

72 It is impossible in this context to list all the public law provisions which might influence private law Claims; references are found in Erçman, *European Environmental Law*, Part 1 (Bern, 1977); McLoughlin, *The Law and Practice Relating to Pollution Control in the Member States of the European Communities. A Comparative Survey* (Luxembourg, 1976); Lummert in: Lummert/Thiem, op. cit., n. 6, ch. 2 A II 1, 2. One important example of such legislation is the concept "best available technology", "best practicable means", or "state of the art technology", used in many countries in regulations on technological requirements for the protection of the environment, see e.g. USA: Clean Air Act Amendments (1970), see. 111 (a) (1); Federal Water Pollution Control Act Amendments (1972) sec. 301 (b) (1) (A); 304 (b) (1) (A); 306 (a) (1); UK: Alkali etc. Works Regulation Act (1906); Control of Pollution Act (1974); Germany: § 5 no. 2 BlmSchG; France: Loi no. 76-663 du 19 juillet 1976 relative aux installations classes pour la protection de l'environnement, Art. 7; Sweden: § 5 ML; Japan: Law No. 97, June 10, 1968, regarding Air Pollution Control, § 9 et seq.
In some countries, public law and private law have been integrated by comprehensive environmental legislation, e.g. in Sweden: Miljöskyddslagen (1969); Colombia: Codigo Nacional de Recursos Naturales Renovables y de Proteccion al Medio Ambiente, decreto No. 2811 DE 1974; Cano, Comprehensive Environmental Legislation: A Summary Review of Colombia’s Environmental Code. In: 1 Environmental Policy and Law 1975/76, 177; Venezuela: Ley Organica del Ambiente, G.O. No. 31.004 de 16 de junio de 1976; further references in Bothe/Gündling, Tendenzen des Umweltrechts im internationalen Vergleich (Berlin/West, 1979), ch. 9.


Associated Contractors Stone Co. v. Pewee Valley Sanatorium & Hospital, 376 S.W. 2d 316 (Ky 1964); Campbell v. Seaman, 63 N.Y. 568 (1876); Rodgers, op. cit., n. 13, pp. 121, 123; in Germany and France injunctions were granted in some cases relating to pig fattening stations, BGHZ 48, 31: Cass. Civ. 20.10.1976, cited in Code Permanent, Environnement et nuisances, sept. 1978 edition, at p. 1177.


§ 22 ML, Persson, op. cit., n. 69, p. 96.


American Smelting & Refining Co. v. Godfrey, 158 F. 225 (8th Cir. 1907); Georgia v. Tennessee Copper Co., 206 U.S. 230, 27 S. Ct. 618; Rodgers, op. cit., n. 13, p. 121; the selection of the remedy in often based on the comparative injury doctrine, cf. Prosser/Wade, op. cit., n. 76.

U.S. v. Reserve Mining Co., 498 F. 2d 316 (8th Cir. 1974).

References by Feldhaus, Bundes-Immissionsschutzrecht, Entscheidungssammlung (2nd ed., Wiesbaden, Mainz, 1974), at § 25 Gewerbeordnung - 7 (VG Gelsenkirchen) and Immissionsschutzgesetze - 4 (OVG Koblenz); cf. Lummert/Thiem, op. cit., n. 6, ch. 3 E.


84 Rodgers, op. cit., n. 13, p. 148; Despax, La pollution des eaux et ses problèmes juridiques (Paris, 1968), pp. 112 et seq.
85 See references in n. 83; also Engler, loc. cit., n. 58, 376; Cass. Civ. 28.2.1971, Bull. no.35,25.
87 §§32, 33 ML.
88 §§ 8 para 3, 31 Wasserhaushaltsgesetz.
89 §§906 BGB, 14 BlmSchG.
90 In Germany, the concept of “Immissionen” as defined by the courts does not include merely aesthetic and “similar” effects (e.g. “ideelle Wirkungen”), see BGH LM No. 2 and 3, § 903 BGB; Forkel, Immissionsschutz und Persönlichkeitsrecht (Köln, Berlin/West, 1968), pp. 35 et seq., Roth, “Materiellrechtliche und prozessuale Aspekte eines privatrechtlichen Umweltschutzes,” (1972) NJW 921, 922; wider concepts are used in the U.S., but not uniformly - see Rodgers, op. cit., n. 13, pp. 113 et seq.; in Switzerland, Forkel, ibid., p. 38; in France, “dommage moral” is generally compensated to a large extent, but difficulties exist in measuring inconvenience.
91 See n. 84.
92 Thiem in: Lummert/Thiem, op. cit., n. 6, ch. 4 C I.
95 This is the traditional background to Anglo-American law, partially revised by the British Crown Proceedings Act (1947) and the American Federal Tort Claims Act (1946). Until 1972 the Situation in Sweden was similar. Personal liability of employees was the rule. Compensation awards by the government could be granted on an equity basis upon Submission by the Justitieombudsman - see Bengtsson, Skadestånd, op. cit., n.93, p. 260.
96 For a comprehensive presentation, see Haftung des Staates für rechtswidriges Verhalten seiner Organe (Liability on the State for the Illegal Conduct of its Organs), Beiträge zum ausländischen öffentlichen Recht und Völkerrecht, Vol. 44 (Köln, Berlin/West, 1967); Zur Reform des Staatshaftungsrechts, Rechtsvergleichendes Gutachten des Max-Planck-Instituts für ausländisches öffentliches Recht und Völkerrecht (Bonn, 1975).
97 USA: s. 118 Clean Air Act; see also the extensive jurisprudence on sovereign immunity, references by Rodgers, op. cit., n. 613, pp. 30 et seq.; Germany, Able, op. cit., n. 63; Steiger, “Immissionen durch Betriebe der öffentlichen Hand”, in: (1974) NJW, 1797; France: Laubadère, op. cit., n. 94, p. 712.
98 Zur Reform des Staatshaftungsrechts, op. cit., n. 96, p. 8; Liability under the U.S. Federal Tort Claims Act, however, is strongly restricted to cases of culpability (Rodgers, op. cit., n. 13, p. 38).
99 This is so in the U.S., 28 U.S.C. § 2680 (a), Bothe in: Zur Reform des Staatshaftungsrechts, op. cit., n. 96, pp. 120 et seq.; Germany: Art. 34 Grundgesetz read in conjunction with § 839 BGB.
100 This is so in Switzerland, Art. 3 of the Verantwortlichkeitsgesetz of March 14, 1958, cf. Kaul, in: Zur Reform des Staatshaftungsrechts, op. cit., n. 96, pp. 108-119; Sweden: ch. 3 § 2 Skadeståndsloge (1972); Hellner, op. cit., n. 21, pp. 310 et seq.; Bengtsson, Skadestånd, op. cit., n.93, pp. 18 et seq., 53 et seq.
101 This is so in the U.S., in Italy, Belgium, the Netherlands and Luxembourg, see Zur Reform des Staatshaftungsrechts, op. cit., in 96, p. 8; in Germany, the breach of official duties (Amtspflichten) involves a presumption of culpability; in France such a presumption exists in cases involving public works (travaux publiques).
102 This is so in France ("faute de service"), cf. Laubadère, op. cit., n. 94, p. 683; in France as well as in the U.S. it is not necessary to identify the person whose conduct was culpable, see also Bothe, in: Zur Reform des Staatshaftungsrechts, op. cit., n. 96, p. 121; van Alstyne, in: Liability of the State, op. cit., n. 96, p. 691.

103 This is so in Switzerland, GDR, Greece, Yugoslavia, see: Zur Reform des Staatshaftungsrechts, op. cit., n. 96, p. 4.

104 28 U.S.C. 2680 (b); liability is excluded in the case of certain agencies (among others the Tennessee Valley Authority) as well as for certain actions, see van Alstyne, in: Liability of the State, op. cit., n. 96, pp. 692, 705; Bothe, in: Zur Reform des Staatshaftungsrechts, op. cit., n. 96, p. 123; in Switzerland, liability is excluded for "amtspflichtigem, rechtswidrigem Staatsakt" (particularly quasi-judicial decisions).

105 This is so in France: Laubadère, op. cit., n. 94, p. 684 and Sweden: Bengtsson, Skadestånd, op. cit., n. 93, pp. 256 et seq., 263 et seq., 303 et seq.


107 Germany: § 839 para 1 BGB; France: Laubadère, op. cit., n. 94, p. 695; Sweden, Bengtsson, Skadestånd, op. cit., n. 93, pp. 303 et seq.


109 § 14 para 3 BlmSchG; § 906 para 2 BGB; § 8 para 3 Wasserhaushaltsgesetz.

110 Particularly in cases of injury to health, defendants often invoke the plaintiff’s particular characteristics like smoking, drinking, diseases and vulnerabilities.

111 Cf. section 2 b supra, n. 70 and accompanying text.

112 Rodgers, op. cit., n. 13, pp. 126, 141 with further references.

113 § 27 of the German BlmSchG provides for statements by the enterprises on emissions. Details, however, may not be published if information concerning trade secrets might be gathered from them.

114 USA: Freedom of Information Act (1967), 5 U.S.C. § 552; business secrets are also protected but information concerning the composition and level of pollutants and effluents are usually revealed, cf. Lummer in: Lummer/Thiem, op. cit., n. 6, ch. 2 A III 2; the same is true of Sweden according to the Tryckfriförsäkring of 1766, cf. Wernigren, Offentlighet och sekretess i lag och praxis (Stockholm, 1971); Malmgren, Sundberg, Petrén, Sveriges Grundlagar (11th ed., Stockholm, 1971), pp. 213 et seq.

115 See references in n. 8 and 9.

116 Germany: RGZ 130, 359; 134, 241; 159, 239; BGH NJW 1951, 653; France: Montpellier 19.3.1964, RGAE 75, 155; Girod, op. cit., n. 6, p. 123; Thiem in: Lummer/Thiem, op. cit., n. 6, ch. 4 C II 1 c.

117 BGH NJW 1972,205.

118 USA: Reserve Mining Co. v. Environmental Protection Agency, 514 F. 2d 492, (8th Cir. 1975); Note, "Reserve Mining, the Standard of Proof Required to Enjoin an Environmental Hazard to the Public Health", 59 Minn. L. Rev. 1975, 893; Sweden: Bengtsson, "De outredda miljöriskerna", (1976) Tidskrift för retningsväningskap, 61 et seq.

119 Greasser, op. cit., n. 2, 50235 et seq.; Sand, Legal Systems for Environmental Protection, Japan, Sweden, United States (Rome, 1972), p. 20; Thiem in: Lummer/Thiem, op. cit., n. 6, ch. 4 B II S.

120 § 26 para 5 of the Austrian Wassergesetz, BGBl. 16.10.1959.

121 See n. 119.

122 See n. 28; see also Thiem in: Lummer/Thiem, op. cit., n. 6, ch. 4 B II 1 and 4 C II 2 a.

123 USA: Zweigert/Kötz, op. cit., n. 12, p. 332; Germany: RGZ 101, 95; France: Girod, op. cit., n. 6, p. 138; pleading force majeure is excluded, however, under the Code de l’aviation (Art. 141-142); Sweden: § 11 para 2 Atomverordnungen; further references in Hellner, op. cit., n. 21, pp. 119 et seq.; Japan: § 3 para 1 Law Regarding Liability for Damages Caused by Nuclear Energy; § 25b Law Regarding Air Pollution Control; § 20a Law Regarding Water Pollution Control.

124 French courts have accepted as evidence amounting to the absence of force majeure that after an accident measures were taken for the prevention of such events, see Cass. Civ. 17.12.1969, Bull. 353, p. 261; Girod, op. cit., n. 6, p. 139.


133 Cf. e.g. Heart Disease Research Foundation v. General Motors Co., 3 ERC 1710 (S.D. N.Y. 1972); Diamond v. General Motors Co., 20 Cal. App. 3d 374, 97 (1971).


137 Alyeska v. The Wilderness Society, 421 U.S. 240 (1975); cf. Lummert in: Lummert/Thiem, op. cit., n. 6, ch. 2 B VI.


139 USA: Damages may not be recovered in a citizen suit under the Noise Control Act (42 U.S.C. § 4911); the situation is unclear under the Clean Air Act (42 U.S.C. § 1857 h-2) and Federal Water Pollution Control Act (33 U.S.C. § 1365); cf. Rodgers, op. cit., n. 13, p. 84; UK: McLoughlin, op. cit., n. 13, pp. 9 et seq.; Italy: Dell'Anno, The Law and Practice Relating to Pollution Control in Italy (Luxembourg, 1976), p. 38; Germany: §§ 403 - 406 Strafprozeßordnung (1877/1975).


141 Thiem in: Lummert/Thiem, op. cit., n. 6, ch. 4 C III 2.

142 See n. 141.

Liability insurance is generally voluntary but in some cases compulsory as under the U.S. Price Anderson Act, the Japanese Act on Liability for Damages Caused by Nuclear Energy, the European and international conventions on liability for nuclear energy and for oil pollution (n. 43).

European Insurance Committee, Working Group on General Liability, Report on Liability for Environmental Damage, with a Survey of the European Countries (1976, in German), p. 21; Thiem in: Lummert/Thiem, op. cit., n. 6, ch. 4 C III 4. The only exception known to the author is a supplementary policy to an enterprise liability insurance policy offered in Germany which also covers damage resulting from continuous emissions.


See n. 43. See also the contribution by Dupuy in this Volume, p. 385 et seq.; the maximum amount of payments from the fund was originally assessed at 450 million Poincaré gold francs, but was extended from April 20, 1979.


See Dupuy in this volume, nn. 39 and 40, p. 389.


Wet inzake de luchtverontreiniging, Statsbl. 1970, p. 1353; Bothe/Gündling, op. cit., n. 73, ch. 3.2.2.2.; Langelaar, "Het fonds luchtverontreiniging" (1974) Milieu en recht, p. 69; Thiem in: Lummert/Thiem, op. cit., n. 6, ch. 4 E II 1.

Art. 64 Nr. 1 of the wet inzake de luchtverontreiniging, cf. Bothe/Gündling, op. cit., n. 73; Thiem in: Lummert/Thiem, op. cit., n. 6, ch. 4 E II 1.


Décret no. 73-193 and implementing arrêté (see n. 82); Bothe/Gündling, op. cit., n. 73, ch. 3.2.1.1.2.; Thiem in: Lummert/Thiem, op. cit., n. 6, ch. 4 E II 4.

Evolution des Concepts de Responsabilité Pénale
par Mireille Delmas-Marty

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I. Introduction
A première vue, l'on peut s'étonner de l'intervention du droit pénal dans le domaine de l'environnement: d'une part, la réglementation et les sanctions administratives et d'autre part, en cas de dommage, la mise en œuvre d'une responsabilité civile, pourraient sembler suffisantes, d'autant que les dispositions ad-
ministratives et civiles se sont très largement développées en matière d'environnement ces dernières années.

Pourtant, on constate depuis quelques années l'intérêt des juristes pour le sujet et, à peu près dans tous les pays, le développement parallèle d'une législation pénale. Même si un tel développement n'a pas toujours fait l'objet d'une volonté conscience et organisée de la part du législateur, il traduit sans doute l'existence de l'un de ces "courants sociaux" évoqués par les sociologues, et dont il peut être utile d'analyser les raisons d'être.

Dans le cadre d'une telle analyse, il paraît nécessaire d'observer la façon même dont le droit pénal s'est développé en matière d'environnement:

- dans une première étape ont été utilisés des textes de droit pénal très généraux (textes du Code pénal sur l'homicide et les blessures par imprudence, lois ou codes régissant la chasse et la pêche, textes relatifs à la circulation routière, réglementation de l'urbanisme, etc...);

- puis des lois particulières introduisant incidemment des sanctions pénales sont intervenues pour protéger certains secteurs précis de l'environnement (sol, eau, atmosphère) ou pour interdire ou réglementer certaines formes de pollutions (établissements classés dangereux), de nuisances (bruit) ou d'atteintes diverses à la nature (destructions et dégradations de la faune ou de la flore);

- enfin l'on constate, tout récemment, l'apparition de réformes, ou projets de réforme, tendant à introduire dans le Code pénal lui-même des délits spécifiques au domaine de l'environnement.

Autrement dit, la sanction pénale est apparue nécessaire, et l'on a utilisé les dispositions dont la généralité même permettait d'englober le domaine de l'environnement. Puis l'on a créé des infractions pénales spécifiques à certains secteurs de l'environnement (seconde étape), mais définies par renvoi aux dispositions civiles ou administratives, selon une sorte de "clause de style" ("toute violation des articles... sera punie de "). Enfin apparaît une formule, complémentaire ou alternative, dans laquelle les délits d'atteinte à l'environnement seraient définis de façon autonome, comme le sont les infractions pénales classiques (vol, meurtre, par exemple).

Or cette évolution du droit pénal de l'environnement est importante, car elle suppose une évolution sous-jacente des fondements de ce droit. Fondement utilitaire d'abord, lorsque, faute de textes particuliers, on appliquait le droit pénal commun; fondement utilitaire encore avec la sanction pénale apparaissant comme une menace destinée à rendre efficaces des dispositions de nature extrapénale. Mais, avec la toute récente place faite à un droit pénal autonome, on en vient à un fondement plus nettement normatif: il s'agit, en réprimant les atteintes les plus graves, d'affirmer l'existence d'un droit à l'environnement, de reconnaître à l'environnement une valeur essentielle (comme l'incrimination du vol et du meurtre implique, par elle-même, la reconnaissance d'un droit à la propriété publique ou privée et d'un droit à la vie, pensée clairement exprimée
par le Conseil Européen du Droit de l’Environnement dans sa résolution reprod-
duite en Annexe).

Ici apparaît sans doute la véritable raison d’être du droit pénal de l'environne-
ment. Du point de vue social, son existence manifeste "la solidarité sociale dans
ce qu'elle a de vital" et, du point de vue du délinquant, il y a autre chose dans
la sanction pénale, répressive et corrective, que dans les sanctions extrapénales,
purement restitutives: car la sanction pénale garde - c'est même là sa spécificité -
une coloration morale qui implique, non tant l'exclusion du condamné, que
l'espoir d'agir sur lui, de l'amener par "une conversion du vouloir" à modifier sa
conduite".

Justifiant l'existence d'un droit pénal de l'environnement, de telles considé-
ration n'en tracent pas moins en même temps les limites. C'est dans cette
perspective qu'il est utile de préciser, à travers leur évolution, les "concepts de
responsabilité pénale"; qu'il s'agisse des infractions (II), ou de leur mise en
oeuvre, c'est-à-dire des modalités de la répression (III).

II. Les Infractions

Qu'elle soit définie par un texte général et polyvalent, ou par une disposition
spécifique à l'environnement, l'infraction pénale devra toujours réunir un
élément matériel (le comportement que l'on veut incriminer) et un élément
moral (la faute que l'on reproche au délinquant).

1. L'élément matériel

On observera d'abord que tous les Etats semblent admettre aussi bien des délits
d'omission que d'action (le droit pénal allemand assimilant d'ailleurs, en règle
générale, la "commission par omission" à l'action).

Ceci étant, l'évolution retracée dans l'introduction laisse entrevoir deux dé-
finitions possibles de l'élément matériel qui, pouvant se combiner entre elles,
offrent en définitive trois possibilités au législateur.

a) Le plus souvent, il s'agit d'un droit pénal auxiliaire, qui sanctionne simple-
lement la violation de dispositions non pénales (civiles ou administratives), et
e l'élément matériel de l'infraction sera alors défini par référence à ces dis-
positions: par exemple le fait d'exploiter un établissement sans l'autorisation
administrative requise ou de procéder à l'élimination de déchets, ou à des
déversements de produits nocifs dans les eaux fluviales ou marines en dehors
de conditions légales requises.

ou peut alors qualifier l'infraction d'"infraction de moyens", en ce sens que
la responsabilité pénale est encourue du seul fait des moyens employés,
indépendamment de tout résultat dommageable.

L'avantage d'un tel système tient dans sa précision (le comportement dé-
llictueux est clairement défini par la règle civile ou administrative à laquelle
renvoie le texte pénal) et dans son caractère préventif (le droit pénal peut
intervenir avant même que le dommage se soit produit - dans ce sens on pourrait parler de "délits-obstacle" ou d'infractions de "mise en danger").

Mais des inconvénients existent aussi: d'une part, la complexité d'une telle législation par renvoi (contenue dans des textes multiples et par conséquent difficiles à connaître, à la fois pour le délinquant potentiel et pour le juge, ce qui risque d'entraîner l'inefficacité de la loi pénale); d'autre part, la lourdeur d'un tel système, qui suppose la définition de ces moyens dangereux pour l'environnement, et impose aux entreprises et aux administrations une organisation fort coûteuse et pas toujours utile; enfin le risque d'impuissance dans les cas les plus graves où, malgré le respect des normes administratives ou civiles, des dommages se seraient produits. D'où l'intérêt de la seconde formule.

b) Parfois, en effet, existe en matière d'environnement un droit pénal normatif, en ce sens que, pleinement dégagé des autres dispositions légales, il pose directement, sans renvoi, la norme dont il assure en même temps la sanction. Il apparaît qu'alors l'élément matériel sera plutôt défini par référence à un dommage, réel ou éventuel, causé à l'environnement.

Ainsi, lorsqu'on sanctionne "quiconque aura jeté, déversé ou laissé écouter dans les cours d'eau, directement ou indirectement, des substances quelconques dont l'action ou les réactions ont détruit le poisson ou nui à sa nutrition, à sa reproduction ou à sa valeur alimentaire" (art. 434-1 Code rural, en France).

Ainsi encore, lorsque en Grande-Bretagne, la common law, peu appliquée il est vrai, définit l'infraction de "public nuisance" comme "une action ou une omission qui porte atteinte de manière sensible au confort raisonnable et à la qualité de la vie de sujets de Sa Majesté". De même, en Grande-Bretagne également, avec le "Public Health Act" de 1936, qui sanctionne pénalement les émissions de poussières et particules "préjudiciables à la santé publique ou qui constituent une nuisance pour le voisinage" (art. 92) ou les rejets dans les eaux qui les rendent dangereuses pour la santé publique (art. 259); avec, aussi, le "Control of Pollution Act" de 1974, qui sanctionne le rejet dans les eaux de substances nocives, toxiques ou polluantes, de matières empêchant l'écoulement normal des eaux ou de déchets solides dans les cours d'eau (art. 31); et le "Salmon and Fresh Water Fisheries Act" de 1975, qui punit le déversement dans les eaux contenant des poissons, de substances nuisant à leur vie, leur reproduction ou leur alimentation (art. 4).

On peut encore citer l'exemple du Code pénal belge (art. 539), qui punit "quiconque aura jeté dans un étang, un vivier ou un réservoir des substances de nature à détruire le poisson".

Si l'avantage de formules de ce type est évidemment d'éviter les inconvénients d'un droit pénal auxiliaire, il n'en demeure pas moins qu'elles laissent, elles aussi, apparaître des défauts; le principal étant la nécessité d'établir une relation de cause à effet entre le comportement que l'on veut sanctionner et le dommage, réel ou éventuel, défini par le texte comme...
élément du délit. L'exigence d'un lien de causalité est d'autant plus gênante que l'équilibre écologique est, d'une part, une notion fort complexe qui dépend de très nombreux facteurs et que, d'autre part, sa détérioration peut être progressive et ne se manifester pleinement qu'au bout de plusieurs années (notamment dans le cas d'atteintes à la santé humaine : il existe, par exemple, des substances cancérigènes dont les effets ne se développent qu'extrêmement lentement).

Ainsi comprend-on que certaines législations aient introduit une troisième formule.

c) Si l'élément constitutif de l'infraction n'est pas le dommage, mais le risque, le problème de la causalité devient moins aigu. Mais il surgit un autre problème, celui du risque acceptable. La forme la plus facile de résoudre ce problème est évidemment la création d'une définition plus précise, par voie d'une norme technique par exemple, de ce qui est une solution tolérable et intolérable. Mais ceci rend inévitable la référence à des normes techniques de la protection de l'environnement.

Il existe, en effet, des infractions plus complexes, dans lesquelles le droit pénal sanctionne la violation de dispositions extrapénales, tout en faisant intervenir le dommage ou le risque de dommage. Autrement dit, l'élément matériel de l'infraction est à la fois défini par référence aux moyens et au résultat.

L'intérêt d'une telle formule doit d'ailleurs être souligné du point de vue du droit pénal international. Elle entraîne la compétence concurrente de plusieurs Etats : celui dans lequel s'est produite la violation des textes réglementaires et celui qui en a subi les effets.

Il est cependant à noter que, dans le domaine particulier de la pollution des mers, les questions de conflits de lois sont réglées par des dispositions internes, elles-mêmes reprises de conventions internationales (par exemple, Conventions d'Oslo du 15 février 1972 et de Londres du 29 décembre 1972 sur les opérations d'immersion) 10.

On peut citer, à titre d'exemple, le droit allemand (R.F.A.), dans lequel, d'une manière générale, l'observance des dispositions statutaires ou des ordres donnés par l'administration en application des lois constitue des infractions administratives (Ordnungswidrigkeiten) et non proprement pénales. Cependant, lorsque cette infraction administrative a pour effet de porter préjudice à la vie ou à l'intégrité physique d'une personne, ou de miner les droits de propriété, elle devient infraction pénale (loi de protection des eaux, modifiée 1976 ; loi sur les déchets, modifiée 1976 ; loi pour la protection des mers contre les immersions, 1977). On notera que pourtant, pour éviter les difficultés de preuve évoquées plus haut, la plupart de ces textes se contentent d'un risque de dommage (cf. supra, notion de mise en danger). On observera aussi que le projet allemand tendant à introduire dans le Code pénal même divers délits d'atteinte à l'environnement (paragr. 359 à 365) semble bien s'orienter vers une autre conception de l'élément matériel,
qui serait constitué du seul fait de "la violation des règlements en vigueur" dans les divers domaines protégés (cf. supra, droit pénal auxiliaire).

Il est vrai que le choix de la meilleure définition possible des infractions pénales en matière d'environnement ne peut être déterminé en dissociant élément matériel et élément moral. En effet, c'est la combinaison des deux - et plusieurs types de combinaison sont concevables - qui doit permettre une définition assez précise pour que soit évité l'arbitraire et assez compréhensible pour que l'environnement soit effectivement protégé (ainsi la notion large de "mise en danger" se combine en Allemagne avec une définition stricte de la faute, alors qu'en France elle apparaît trop répressive compte tenu de la définition beaucoup plus large de la faute).

2. L'élément moral

Théoriquement, l'élément moral de l'infraction pénale peut reposer soit sur une faute intentionnelle (dol), soit sur une faute d'imprudence ou de négligence, soit sur une simple faute "matérielle" ou "contraventionnelle"; cette dernière formule étant exclue parfois (par exemple en R.F.A., paragr. 15 StGB et jurisprudence de la Cour fédérale et de la Cour constitutionnelle étendant l'exclusion aux "Ordnungswidrigkeiten"), ou, à l'inverse, largement admise sous le nom de responsabilité pénale objective ("strict liability" des pays de common law).

Sauf quelques exceptions (art. 539 C. pén. belge, par exemple), la plupart des droits en vigueur n'exigent pas la faute intentionnelle. Ceci étant, le jeu assez complexe des diverses causes de justification, plus ou moins facilement admises selon les législations, aboutit à dessiner, du point de vue de la faute exigée en droit pénal de l'environnement, trois grands systèmes.

a) Le système le plus strict, celui du droit allemand, exige une faute véritable (dol et surtout imprudence ou négligence), la notion de "faute matérielle" étant exclue (cf. supra).

De plus, les justifications semblent assez largement admises (au titre d'excuses pu de faits justificatifs): ainsi l'erreur inévitable, la conformité des faits aux règlements administratifs en vigueur (art. 38, loi protection des eaux, modifiée 1976), la faible importance du dommage (notion de pollution "socialement acceptable"); enfin les causes de droit commun prévues par le Code pénal (légitime défense, urgence ou état de nécessité, la "nécessité économique" n'étant cependant pas admise comme fait justificatif).11

b) A l'opposé, les systèmes les moins stricts se contentent le plus souvent d'une simple faute "matérielle", que l'accusation n'a pas à prouver car elle se déduit des faits eux-mêmes, dont l'existence fait peser sur le prévenu une présomption de faute. Il est à noter que cette formule (admise, notamment, dans les droits belge et français et pour les contraventions en droit néerlandais) est extrêmement rigoureuse pour la personne poursuivie, qui ne peut pratiquement invoquer aucune cause de justification (notamment reste inopérant le fait d'avoir pris toutes les précautions requises); seule la démence, ou une contrainte imprévisible et irrésistible (force majeure), lui permettrait d'échapper à la répression.
Certes des lois récentes, utilisant un système qui l'on pourrait appeler d’"incrimination à deux temps", rendent à la faute une certaine place. Ainsi lorsque en France (loi 20 août 1961 sur la protection de l'air, loi 16 déc. 1964 sur la protection des eaux) le législateur définit d'abord des contraventions reposant sur la violation des dispositions civiles et administratives de la loi, il est prévu que le tribunal de police peut ordonner, à titre de sanction, certains travaux; or la non-exécution de ces travaux, qui révèle cette fois la pleine intention délictueuse de l'agent, constitue seule un délit correctionnel.

Cependant, en dehors de ces textes particuliers, c'est bien la notion de faute "matérielle" que l'on retrouve, alors même que l'infraction serait punie de peines allant parfois jusqu'à un an d'emprisonnement (art. 434-1 Code rural français, par exemple), ou même jusqu'à cinq ans (loi 26 déc. 1964 sur la pollution des mers, loi déc. 1978).

Notamment le principe a été récemment affirmé très nettement en France dans un arrêt de principe rendu par la Cour de cassation le 28 avril 1977: "Le délit de pollution de cours d'eau, prévu et puni par l'article 434-1 du Code rural, a seulement le caractère d'une infraction matérielle; le fait qu'il incrimine d'avoir laissé s'écouler dans une rivière des substances toxiques implique une faute dont la preuve n'a pas à être spécialement rapportée par le ministère public et dont le prévenu ne peut être exonéré que par la force majeure".

Or il faut observer que cette notion de "force majeure" est interprétée fort restrictivement par la jurisprudence; la Cour de cassation refusant, par exemple, de tenir compte de la fausse manoeuvre d'un ouvrier, de la rupture des digues dans des champs d'épandage d'une sucrerie ou de précipitations atmosphériques d'une exceptionnelle gravité. A trop vouloir renforcer la répression, on risque de l'affaiblir, car, si l'ambition du droit pénal est de "modifier les conduites", encore faut-il qu'une conduite véritablement fautive soit à l'origine de la répression. La tendance actuelle à une "objectivation du droit de la responsabilité pénale apparaît d'autant plus inopportune que les fondements moraux d'une telle répression ne sont pas toujours clairement perçus par le milieu social que cette réglementation est appelée à régir. Ceci explique peut-être, tout au moins pour partie, le coefficient d'inapplicabilité extrêmement élevé des textes prévoyant des incriminations écologiques.

Cette tendance de certains droits continentaux au développement d'une responsabilité pénale pour faute "matérielle" est d'autant plus surprenante - et inquiétante - que, parallèlement, évoluent les systèmes de "common law" qui, traditionnellement pourtant, admettaient une responsabilité pénale "objective".

c) En définitive, intermédiaires entre les deux premiers systèmes concernant la faute exigée, les systèmes de "common law", et notamment le droit britannique, retiennent en principe une responsabilité pénale sans faute ("strict liability"), mais assortie de tant de causes d'exonération que, bien souvent, le prévenu pourra dégager sa responsabilité s'il prouve qu'il n'a pas...
Il est vrai que la situation juridique est assez compliquée, car, d'une part, la preuve d'une faute véritable (intention ou imprudence) continue d'être requise pour les infractions de "common law" proprement dites et pour celles qui, malgré une codification postérieure, ont leur origine dans la "common law". D'autre part, pour les infractions créées par voie législative - de loin l'essentiel en matière d'environnement - elles sont la plupart du temps définies comme "matérielles" ou, plus exactement, selon la formule alternative, "causing or knowingly permitting" 18, formule interprétée de façon fort rigoureuse par la Chambre des Lords dans l'affaire Alphacell en 1972 19: "Si l'on devait considérer que la loi ne permettait de condamner que si l'accusation était capable de faire la preuve, souvent impossible à rapporter, que la pollution avait été causée intentionnellement ou par négligence, de nombreux faits de pollution échappereraient à toute sanction, au grand soulagement de nombreux propriétaires riverains"...

À première vue, on est donc fort près de la formule retenue en 1977 par la Cour de cassation française; cependant, dès l'affaire Alphacell, la Chambre des Lords réservait le cas où l'acte illicite aurait été causé par le fait d'une personne étrangère à l'entreprise 20. Et surtout, et c'est là ce qui rend évidemment la situation juridique fort complexe, le législateur lui-même prévoit des causes d'exonération, mais, au lieu de les définir à titre général, il précise à propos de chaque infraction les faits justificatifs qui pourront être invoqués: ainsi, le respect des prescriptions ordonnées par l'autorité locale, l'inspection de l'alcali ou toute autre autorité administrative chargée de délivrer les permis, autorisations ou homologations nécessaires; de même l'emploi, par l'industriel prévenu, des "best practical means" (meilleurs procédés de prévention des émissions polluantes ou d'épuration des effluents) 21.

Constituent également des causes d'exonération l'état d'urgence et le souci de préserver la santé publique (par exemple C.P.A. 1974, art. 31 (2) (d) et 3 (4) (d)); l'état de nécessité ou la contrainte, à condition qu'une diligence convenable ait été utilisée pour limiter le dommage (P.O.P.A., art. 5, 6 (1) et 6 (2)) les causes d'exonération n'étant pas les mêmes selon qu'il s'agit d'un déversement effectué à partir d'un navire, d'une plateforme de forage ou d'une installation à terre); de même peut être invoquée l'erreur (prévenu mal renseigné, C.P.A., art. 3 (4) (a)); enfin, des exemptions particulières sont accordées pour des raisons même économiques ou pratiques (fermiers, exploitants de carrières et de mines pour les rejets dans les eaux).

Ajoutons qu'en outre, selon un système qui rappelle un peu l'exemple français "d'incrimination à deux temps", certains textes (lutte contre le bruit, C.P.A., art. 57) ne prévoient l'application d'une sanction pénale qu'après une mise en demeure infructueuse de l'autorité locale de cesser ou d'interrompre l'activité bruyante et - ou - de prendre certaines mesures d'isolation phonique).

Et l'on peut alors considérer que la faute du prévenu est bien établie s'il n'obéit pas à la mise en demeure (un recours contre l'ordre de l'autorité locale étant d'ailleurs prévu pour éviter les risques d'arbitraire administratif).
En définitive, la définition de l’infraction pourrait, tenant compte des divers systèmes énoncés, et de leurs avantages et inconvénients respectifs, obéir au texte de la Résolution adoptée en juin 1977, à Londres, par le C.E.D.E. (art. 2 et 3, infra en annexe).

Cependant la définition des infractions est étroitement liée à celle des modalités de la répression: ainsi, par exemple, la faute doit être reprochée à celui que la loi désigne comme responsable. Elle sera donc, bien évidemment, appréciée de façon différente selon la qualité de celui-ci.

III. Les Modalités de la Répression

Écartant ici les questions de procédure (constatation des infractions, déclenchement des poursuites, rôle éventuel des particuliers ou des associations de défense de l’environnement(2)) ce rapport envisagera essentiellement, du point de vue de la répression, deux questions: qui est responsable? quelles sont les sanctions applicables?

1. La responsabilité

Si l'ensemble des systèmes juridiques semblent retenir le principe que nul n'est passible de peine qu'à raison de son fait personnel, des différences (que l'on peut qualifier d'interprétations divergentes du principe ou d'exceptions véritables) apparaissent dans l'application de cette responsabilité aux personnes physiques et morales.

a) Pour les personnes physiques, il est admis, à peu près partout que la responsabilité pénale peut peser sur le préposé, auteur matériel de délit, ou sur l'employeur, auteur moral qui a laissé (ou plus rarement fait) commettre l'infraction, et ceci même s'il s'agit d'un élu local(23).

Cependant des différences apparaissent. En droit anglais, l'employeur est responsable seulement s'il a "sciemment" laissé commettre l'infraction (art. 31, 32, C.P.A. 1974), et la loi-déchets en France pose le même principe (art. 25, 1.11 Juill. 1975), le préposé restant tenu lui-même à une certaine vigilance et pouvant être aussi déclaré pénalement responsable. Par contre, en droit néerlandais, la responsabilité de l'employeur exclut celle du préposé.

D'un autre côté, dans certains droits (par exemple en Belgique, France sauf le cas particulier précité de la loi de 1975), la responsabilité de l'employeur est retenue sans exclure celle du préposé, mais sur la base d'une simple négligence dans la surveillance ou même d'une simple faute matérielle, appréciée de façon plus ou moins stricte. Cependant l'avant-projet de révision du Code pénal français modifie la situation en retenant comme auteur de l'infraction (art. 30, 2º) celui qui, "par omission volontaire (faute intentionnelle) ou incurie (faute de négligence), laisse enfreindre par des personnes placées sous son autorité les prescriptions légales ou réglementaires pénalemment sanctionnées, dont la charge d'assurer le respect lui est personnellement imposée". Il semble donc écarter le cas de la faute purement "matérielle" de l'employeur.
Enfin, à supposer la faute requise établie, l'employeur peut s'exonérer de sa responsabilité s'il établit avoir délégué ses pouvoirs à un tiers. Mais les conditions de la délégation varient. Ainsi le droit français (c'est-à-dire, faute de texte de loi, la jurisprudence de la Cour de cassation) admet la dérogation, non pas en cas d'actes relevant du fonctionnement général de l'entreprise, mais s'agissant d'infractions relevant du fonctionnement technique, si l'employeur "établit qu'il a délégué ses pouvoirs à un préposé pourvu de la compétence et de l'autorité nécessaires pour veiller efficacement à l'application de la loi".

D'un autre côté, le droit belge admet (art. 20, loi 1974 sur les déchets) la possibilité pour l'employeur de déterminer à l'avance, et sous contrôle administratif, le délégué qui, sauf faute personnelle de l'employeur, sera le seul pénallement responsable, ceci malgré les risques, dénoncés lors des travaux préparatoires de la loi, de voir désigner ainsi un bouc émissaire payé par l'entreprise pour encourir la responsabilité pénale pour des fautes qu'il n'aura pas toujours commises ni pu éviter (l'exigence d'une procédure d'agrément administratif et d'une éventuelle responsabilité concurrente de l'employeur ayant permis cependant le vote du texte).

Enfin, le droit allemand admet également la nomination, dans les établissements industriels importants, d'agents chargés spécialement de la surveillance des émissions et des rejets (Bundesimmissionsschutzgesetz, paragr. 53; Wasserhaushaltsgesetz, paragr. 21a). Cependant, ces agents ont seulement pour rôle d'informer la direction de l'établissement et de faire des propositions, et il semble généralement reconnu en doctrine qu'ils ne peuvent pas être tenus pénallement responsables si les émissions ou les rejets ne sont pas conformes aux normes protectrices définies par l'administration.

11 est vrai que l'ensemble des règles ainsi déterminées pourraient aussi, le cas échéant, s'appliquer à l'employeur personne morale.

b) Quant aux personnes morales, elles sont régies par des dispositions nettement différentes d'un système juridique à l'autre.

D'une part, leur responsabilité pénale est admise parfois, même pour les personnes morales de droit public. Ainsi, en droit britannique, la jurisprudence depuis une décision de 1845, puis le législateur avec l'"Interpretation Act" de 1889 (52 & 53 Victoria, c. 63, s. 2) et le "Criminal Justice Act" de 1925, ont admis progressivement le principe qu'une personne morale peut être pénallement responsable de tous les délits, y compris celui de "conspiracy". En pratique, peu de sociétés ont été tenues responsables de délits classiques de common law. Par contre, les délits économiques et ceux de pollution sont couramment mis à leur charge. Cette responsabilité, selon les cas personnelle (principe de l'"alter ego") ou déléguée (adage "respondet superior"), peut être mise en cause dans les circonstances de fait qu'il est en pratique souvent malaisé de définir, la difficulté essentielle étant d'identifier les personnes qui sont supposées agir en tant que personne morale ("personal liability") et non pour elles ("vicarious liability"), car la responsabilité pour autrui n'est admise que dans un nombre limité d'hypothèses, alors que la responsabilité personnelle de la personne morale se
calque sur celle de la personne physique. Parfois le législateur précise quelles sont les personnes dont les agissements peuvent être identifiés à ceux d'une société.

Sinon les frontières sont difficiles à tracer. Dans l'affaire Bolton Engineering Co v. Graham en 1957, Lord Denning distingue les employés d'une société, qui en sont les instruments, des organes dirigeants, qui en représentent l'esprit et la volonté. Mais les nuances sont parfois subtiles, par exemple entre le gérant chargé de tous les pouvoirs d'administration courante et le dirigeant d'une succursale d'une chaîne de grands magasins.

Cette responsabilité pénale des personnes morales est admise également, et dans des conditions assez larges, aux Pays-Bas (loi 22 juin 1950, art. 15, sur les délits économiques, directement applicable à certains délits d'atteintes à l'environnement et, sinon, reprise dans le texte même des lois protectrices de l'environnement, art. 51 Code pénal, modifiée le 23 Juin 1976, consacrant d'un façon générale le principe). Il est à noter que le texte néerlandais (art. 15, 2°, loi 1950) précise que l'infraction est réputée commise par une personne morale si elle est perpétrée par "des personnes à son service dans sa sphère d'activité" (notion qui paraît fort large ...).

A l'inverse, d'autres pays excluent la responsabilité pénale des personnes morales, appliquant l'adage "societas delinquere non potest", avec, il est vrai, bien des nuances.


D'un autre côté, le droit allemand admet, dans le cadre des infractions administratives, la responsabilité des personnes morales, et même des groupements sans responsabilité morale (paragr. 30 Ordnungswidrigkeitengesetz), à condition, il est vrai, qu'une faute ait été commise par une personne physique faisant partie du groupement, mais sans qu'il soit nécessaire d'individualiser cet agent.

Enfin, l'avant-projet de Code pénal en France prévoit (art. 37 à 39) une responsabilité pénale des groupements "dont l'activité est de nature commerciale, industrielle ou financière". Les rédacteurs du texte précisent d'ailleurs que cette responsabilité est fondée sur "la réalité de l'existence sous tous ses aspects du groupement, mode d'expression d'un véritable vouloir collectif capable d'interdiction, d'action et donc de faute".

Resterait encore à résoudre la question de l'attribution de la responsabilité pénale au sein d'un groupe de sociétés, national ou multinational (l'affaire de Seveso, en Italie, fournissant un exemple de pollution de ce dernier type). Il semble que l'on s'oriente alors, si l'on suit la jurisprudence des Commu-
nautés européennes (application des art. 85 et 86, Traité de Rome), vers une responsabilité du groupe dans son ensemble, dont l’"unité économique" impliquerait la présomption d'une responsabilité conjointe des sociétés de groupe\textsuperscript{35}.

Il est vrai qu’il n’est pas toujours facile non plus, s’agissant d’un groupe multinational, d’obtenir une exécution effective de la sanction, à supposer qu’elle ait été prononcée.

2. Les sanctions

L’arsenal des sanctions peut, à première vue, sembler satisfaisant. Les textes les plus récents, du moins, prévoient des sanctions traditionnelles assez lourdes (amende et emprisonnement). On notera, à titre d’exemple significatif, qu’à la suite du naufrage de l’Amoco-Cadix sur les côtes françaises, le Gouvernement a présenté un texte modifiant la loi du 26 décembre 1964 sur la pollution de la mer par les hydrocarbures et aggravant considérablement les peines applicables (art. 1er projet), portées, pour l’amende de 10.000 à 100.000 Frs, à une amende de 500.000 à 5.000.000 Frs et, pour l'emprisonnement de trois mois à deux ans, à un emprisonnement d’un à cinq ans; la loi prévoyant en outre la possibilité d'une immobilisation du navire (levée s’il est fourni un cautionnement), ordonnée par décision du procureur de la République ou du juge d'instruction saisi.

Ajoutons qu’apparaissent également des sanctions nouvelles assez diversifiées: par exemple, en Belgique, l'interdiction d'utiliser certaines installations (art. 41, al. 2, loi 26 mars 1971 sur la pollution des eaux de surface), la démolition de certaines installations (même loi), ou encore la remise des lieux en l'état primitif (même loi); aux Pays-Bas, la loi de 1950 sur les infractions économiques (appllicable directement ou transposée dans le domaine de l'environnement) prévoit (art. 6, 7 et 8): l'arrêt temporaire de l'entreprise, des peines pécuniaires complémentaires proportionnées à l'avantage économique retiré de l'acte illicite, des interdictions professionnelles, le versement d'une caution, la mise sous séquestre de l'entreprise, etc. ...; et l'avant-projet de révision du Code pénal français détermine, à propos des personnes morales, des sanctions spécifiques du même type\textsuperscript{36}. Ajoutons d'ailleurs que certaines de ces mesures peuvent être ordonnées dès le début du procès (par exemple, Art. 43-5 Code pénal en France; art. 9, loi 29 mars 1971 sur les eaux en Belgique)\textsuperscript{37}.

Tout le problème reste, bien sûr, d'attirer suffisamment l'attention des autorités de contrôle et de répression afin que les infractions soient effectivement recherchées, poursuivies, et que l'on ne voit plus, comme récemment en France (1976), un tribunal de police, jugeant trois industriels qui étaient poursuivis pour avoir déversé des déchets polluants dans une rivière (loi 16 déc. 1964, protection des eaux), les condamner à ... 80 Frs d'amende\textsuperscript{38}.

IV. Conclusion

En définitive, il parait difficile de proposer un modèle type de législation pénale qui serait le meilleur en matière de protection de l'environnement. Tout dépend
des États et de leurs traditions juridiques. À cet égard, le souplessse des deux résolutions présentées en annexe paraît pleinement justifiée.

L'essentiel est qu'une telle législation pénale existe et qu'elle soit appliquée. Nous avons tenté de décrire divers systèmes possibles; en nous attachant à en analyser les avantages, mais aussi les faiblesses, ceci précisément afin de montrer, pour chacun, où devraient se porter les efforts du législateur afin que le droit pénal de l'environnement soit autre chose qu'un droit alibi, une réponse purement théorique.

Au-delà, pourtant, de cette inévitable relativité des concepts de responsabilité pénale, il paraît nécessaire de souligner l'existence de plusieurs exigences essentielles.

1. La responsabilité pénale ne devrait pas pouvoir peser sur celui qui n'a commis aucune faute intentionnelle ou de négligence, ou qui établit avoir pris toutes les précautions possibles pour éviter le dommage. Sinon le droit pénal, à trop vouloir punir, perdrait toute valeur normative.

2. Dans le conflit, fréquemment invoqué par les délinquants, entre intérêts économiques (à court terme) et intérêts écologiques (à long terme), la préférence devrait être reconnue à ces derniers. Ainsi devrait être exclue toute justification tirée de la "nécessité économique".

3. Pour que le droit pénal de l'environnement joue un rôle effectif, il est indispensable que soit encouragée une prise de conscience dans l'opinion publique de l'importance de ce type d'infraction.

4. L'effectivité du droit pénal suppose aussi que soit admise la responsabilité des entreprises publiques ou d'État (ou de leurs dirigeants) et des agents publics qui permettent de commettre les délits ou les laissent commettre.

5. L'effectivité du droit pénal suppose enfin une coopération et une coordination internationales en vue d'une protection uniforme de l'environnement dans l'intérêt commun de tous les États.

3 Mugner-Pollet, "Fondements philosophiques et moraux de la délinquance écologique" (Nice, octobre 1977), Congrès de l'Association française de criminologie. La délinquance écologique, ed. Université de Nice, 1979, p. 21 et seq. V. également, même Congrès, Delmas-Marty, "A propos de la politique criminelle en matière de délinquance écologique", p. 185 et seq. 
4 Par exemple, en France, art. 431-1 C. rur., art. 319 et 320 C. pén.; loi 1917, mod. 1977, sur les établissements d'asile dangereux; en Grande-Bretagne, Alcali Act, 1906; Public Health Act, 1936; infraction - fort peu utilisée - de "public nuisance" de la common law; aux Pays-Bas, loi 1896 sur les nuisances produites par les établissements industriels et commerciaux.
5 Le plus souvent, il s'agit de textes spécifiques à la protection de l'air, de l'eau, du sol, de la nature, ou à la lutte contre les nuisances (bruit, par exemple). Parfois il existe un texte à vocation plus générale, par exemple le Control of Pollution Act (C.P.A.) de 1974 en Grande-Bretagne. Pour des exemples précis, Delmas-Marty et Lambrecht, Etude comparée du droit pénal de l'environnement. (Rapport dactylographié, juillet 1978, Ministère de l'environnement) et Dupontavice, L'apport des expériences étrangères à la notion de délinquance écologique, in: La délinquance écologique, précitée, p. 199 et seq. 
6 En France, par exemple, art. 18 et 20, I. 19 juill. 1976 sur la protection de la nature; art. 13, I. japonaise sur le contrôle de la pollution de l'air (modifiée en 1970); au Canada, 533 Clean Air Act du 23 juin 1971. 
7 En France, par exemple, art. 24, I. 15 juill. 1975; art. 20 et 21, I. 16 déc. 1964. 
16 Despax, "Bilan juridique de la délinquance écologique", Le nouveau pouvoir judiciaire, avril 1978, p. 15 et La délinquance écologique, p. 41 et seq.
18 Ibid.
20 Voir aussi l'arrêt de la Chambre des Lords dans l'affaire Price v. Gromeck (1975) 2 All. E.R. 115, où le prévenu, propriétaire d'un champ, s'était contenté de mettre ce dernier à la disposition d'une entreprise pour y stocker des déchets. Les déchets s'entendaient dans un cours d'eau à cause de la mauvaise étanchéité du bassin, mais la responsabilité pénale du propriétaire du champ fut écartée.
22 Cf. n. 10, existence de transactions administratives pouvant éteindre l'action publique, spécialisation des magistrats, etc. ..., cf. Résolution C.E.D.E. 1977, précit., points 4, 6 et 7.
26 Voir Constant, le Congrès international de droit comparé, Budapest, août 1978, Rapport général, "La responsabilité pénale non individuelle".
29 1 QB 159; voir aussi Tesco Supermarkets Ltd. v. Natrass (1971), 2 W.L.R. 1166, et seq.
30 Affaire Lennard's Carrying Co. Ltd. v. Asiatic Petroleum Ltd. (1915) A.C. 705.
31 Affaire Tesco, précitée.
33 Avant-Projet définitif de Code pénal, La Documentation Française, 1978, Mémoire de présentation, p. 41.


37 Sur les suggestions qui paraissent utiles en la matière, voir Résolution C.E.D.E. 1977 précit. (points 8, 9 et 10) et A.I.D.P., 1979 (point 8).


40 Cf. Résolution A.I.D.P., 1979 (point 9).

41 Cf. Résolution A.I.D.P., 1979 (points 6 et 7).
Annexe I

Conseil Européen du Droit de L’Environnement
Résolution n° 5 (1977)
Droit Pénal et Protection de L’Environnement

Rapporteur:
Mireille Delmas-Marty

Le Conseil européen du droit de l’environnement, conscient de la nécessité d’in-criminer pénallement des actes ou abstentions transgressant une disposition légale ou réglementaire et susceptibles de porter une atteinte grave à l’environnement, et constatant l’insuffisance des sanctions encourues et appliquées, adopte la Résolution suivante:

1. Valeur fondamentale comme la vie ou la propriété privée et publique, l'environnement doit être protégé au même titre par le droit pénal: à côté du meurtre ou du vol, chaque code pénal doit comprendre une ou plusieurs incriminations de pollution, de nuisance, de destruction, de dégradation ou autres atteintes à la nature.

2. Matériellement ces incriminations, définies comme délits d’habitude, seront déterminées avec précision, par référence aux moyens employés ou au dommage causé.

Moralement elles devront résulter soit d'une intention délictueuse, soit d'une imprudence grave et délibérée, les peines étant aggravées en cas de dommage irréversible.

3. Des lois particulières définiront, en outre, des infractions reposant seulement sur le non-respect de prescriptions légales ou réglementaires déterminées (une faute intentionnelle n’étant pas alors nécessairement exigée).

4. Des dispositions relatives à la responsabilité, à la procédure et aux sanctions, inspirées des principes ci-dessous (5 à 10) devront être regroupées dans un chapitre spécial d’une loi-cadre relative à la protection de l’environnement.

5. Dans le cas de délits commis à l’occasion des activités d’une personne morale publique ou privée, les responsables seront, sans préjudice des poursuites exercées contre l’auteur matériel:

— ceux qui sciemment ont fait commettre l’acte incriminé par un tiers;

— ceux qui, par omission volontaire ou négligence, ont laissé enfreindre par des personnes placées sous leur autorité des prescriptions légales ou réglementaires pénallement sanctionnées;

— la personne morale elle-même.

6. Dans les limites des règles de procédure pénale de chaque Etat, la poursuite et le jugement des infractions sera de la compétence exclusive de l’autorité...
judiciaire, celle-ci pouvant toutefois solliciter un avis de l'administration en cause. Une formation spéciale des magistrats paraît souhaitable, ainsi que le développement d'une meilleure collaboration avec l'administration.

7. Dans les conditions fixées par la loi, et dans les limites des règles de procédure pénale de chaque État, toute personne privée, physique ou morale, devrait pouvoir déclencher les poursuites; la victime, personne physique ou morale, notamment une association de défense de l'environnement, devrait pouvoir demander réparation du préjudice, direct ou indirect, porté à ses intérêts, personnels ou collectifs.

8. Les sanctions principales, d'emprisonnement et d'amende, devront être accompagnées de mesures réparatrices, assorties ou non d'astreinte: remise en état des lieux et mise en place d'un dispositif dépolluant, etc.

9. En respectant les droits du personnel et des tiers, et dans la mesure où le droit applicable dans les différents États ne les confie pas déjà à d'autres instances judiciaires, des sanctions complémentaires pourront en outre être prononcées: l'injonction avec ou sans astreinte, l'interdiction provisoire ou définitive d'exercer tout ou partie de l'activité professionnelle à l'occasion de laquelle l'infraction a été commise, la fermeture provisoire ou définitive de l'entreprise ou de l'un de ses établissements, la suspension du fonctionnement d'une ou plusieurs installations, la confiscation générale ou spéciale, la publicité de la condamnation. Dans le cas des personnes morales, pourra en outre être ordonné le placement provisoire sous surveillance judiciaire ou administrative.

10. En cas d'urgence, une ou plusieurs de ces mesures pourront être ordonnées à titre provisoire dès le début du procès par l'autorité judiciaire.

11. Il sera établi régulièrement des statistiques relatives à la criminalité en matière d'environnement (mode de révélation des faits délictueux, incrimination retenue, décision prononcée, durée du procès, importance du dommage, exécution effective des sanctions, etc. ...). A partir de ces statistiques et de l'étude des dossiers, pourront être suscitées des recherches sur les aspects socio-juridiques, psychologiques et économiques de cette forme de délinquance.
ANNEXE II
Résolution adoptée par la Section II du XIIe Congrès
de l'Association internationale de droit pénal,

La Protection Pénale du Milieu Naturel

Préambule

1. La question de la protection du milieu naturel devient pressante dans le monde contemporain. L’humanité, qui s’enorgueillit de ses réalisations scientifiques et techniques, de l’essor de la culture et de l’instruction, se trouve devant une menace d’autodestruction.

2. Il est donc nécessaire de prendre d’énérques mesures pour protéger la vie et sa qualité contre ce qui les menace. Ce but implique qui soient résolus les conflits qui peuvent surgir entre le développement économique et la protection du milieu naturel. Il exige également une coopération et une coordination à l’échelle nationale et internationale.

Recommandation sur le plan national

3. Dans un domaine où il convient avant tout de préserver le milieu naturel, les disciplines non pénales jouent le rôle essentiel. Cependant le droit pénal doit d’abord intervenir pour assurer l’efficacité des règles non pénales, notamment du droit administratif ou du droit civil. Dans ce domaine, le droit pénal remplit donc une fonction plutôt auxiliaire. Il faut également que le droit pénal intervienne de façon indépendante en cas d’atteinte grave au milieu naturel.

4. Pour une protection efficace du milieu naturel, il est indispensable de reconnaître, au delà de celle de la vie ou de la santé humaine, la protection de biens tels que l’eau, l’air ou le sol, qui constituent à l’heure actuelle le minimum à protéger pénallement. Il est en outre nécessaire d’améliorer le plus tôt possible la protection d’autres biens, notamment la flore et la faune, et de lutter contre les vibrations ou bruits excessifs.

5. En droit pénal spécial, il ne faut donc pas se borner aux dispositions traditionnelles, mais aussi instituer ou développer des dispositions spécifiques au milieu naturel. Ces dispositions prévoiront l’application de sanctions pénales soit aux violations des règles administratives et judiciaires, ou des injonctions administratives ou judiciaires, soit à toute autre forme de mise en danger du milieu naturel.

6. Comme les atteintes graves au milieu naturel sont le plus souvent commises par des personnes morales et entreprises privées, publiques ou d’État, il est nécessaire d’admettre la responsabilité pénale de celles-ci ou de leur imposer le respect du milieu naturel sous la menace de sanctions civiles ou administratives.
7. Quant aux personnes physiques, il est nécessaire de retenir la responsabilité pénale et de ceux qui ont commis matériellement l'acte délictueux, et des dirigeants et agents publics qui ont donné l'ordre ou la permission de commettre l'infraction, ou l'ont laissé commettre.

8. Dans un souci d'efficacité, on ne doit pas se limiter aux sanctions pécuniaires, mais prévoir, dans la mesure où le système juridique le permet, une vaste gamme de sanctions, notamment l'interdiction temporaire de production, la fermeture de l'entreprise, l'interdiction professionnelle, la publicité de la condamnation et, dans les cas les plus graves, la privation de liberté.

9. Pour rendre effectif le droit pénal du milieu naturel, il faut faciliter la prévention, la découverte et la poursuite des infractions par une gamme de moyens appropriés, dont l'encouragement à une prise de conscience dans l'opinion publique de l'importance de ce type d'infractions.

Recommandations sur le plan international

10. Il ne suffit pas de protéger le milieu naturel sur le plan national. En effet, sa nature est telle qu'un dommage dû à la pollution, à l'exploitation abusive des ressources ou à toute autre forme d'atteinte peut frapper le milieu naturel sur les territoires non nationaux, notamment en haute mer ou dans l'espace cosmique.

11. La protection est tout aussi nécessaire lorsque des actes nuisibles sont commis ou tolérés par un État contre le milieu naturel d'un autre État, ou par une entité étrangère (personne physique ou juridique, navire, etc.), ou encore qu'une atteinte au milieu naturel par une quelconque négligence se produit d'un territoire international ou national à un État voisin.

12. Il faut donc élaborer la définition internationale des futurs principes, normes et seuils de tolérance minima dont l'application sera d'abord réalisée grâce à une approche commune des juridictions nationales.

13. Les agressions graves et délibérées contre le milieu naturel doivent être qualifiées de crimes internationaux et punies de façon appropriée.

14. Les instruments principaux consistent en l'élaboration ou l'application de conventions régionales ou universelles et de codes sur le sujet qui serviront de modèles aux lois nationales. Ces conventions feront obligation aux États contractants de sanctionner pénallement les actes dangereux pour le milieu naturel et de prévoir dans ces cas, l'entraide internationale en matière pénale, y compris l'extradition. À défaut de tels instruments, l'application extraterritoriale de la loi nationale peut offrir une solution.

15. Il est, d'autre part, nécessaire d'échanger des informations concernant les atteintes au milieu naturel qui affectent la communauté internationale; notamment les organismes en place doivent être encouragés à ajouter les atteintes au milieu naturel à leur champ d'activité.
16. Il est tout aussi urgent d'énoncer les principes de solution des conflits de
lois, pour réduire les tensions résultant de l'application unilatérale de lois
nationales.

17. Enfin il apparaît hautement souhaitable de développer la collaboration entre
Etats dans la perspective de juridictions régionales, puis d'une juridiction
internationale.

Conclusion générale

18. Les recommandations susdites constituent les conditions minima à respecter
par chaque Etat en vue d'une protection uniforme du milieu naturel dans
l'intérêt commun des pays en voie du développement et des pays industri-
alisés.

19. Le conflit entre intérêts économiques à court terme et intérêts écologiques à
long terme doit être résolu au profit de ces derniers.
Redeployment of Industries to Developing Countries - Environmental Considerations
by Rahmatullah Khan

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This paper endeavours to address the policy issues involved in the newly emergent concept of redeployment of industrial capacities from the developed to the developing countries as a result of environmental considerations.

I. Background - The Stockholm Declaration

The Declaration of the United Nations Conference on the Human Environment (Stockholm Declaration) contains no principle of direct relevance to the concept under discussion. The contradiction which might exist, however, between the demands of environmental protection and the requirements of economic development become quite apparent in some of its provisions, for instance Prin-
ciple 11: "The environmental policies of all States should enhance and not adversely affect the present or future development potential of developing countries, nor should they hamper the attainment of better living conditions for all, and appropriate steps should be taken by States and international organizations with a view to reaching agreement on meeting the possible national and international economic consequences resulting from the application of environmental measures". It is also quite clear that Principle 23 is intended to preserve the freedom of developing nations to grant the requirements of economic development priority over environmental concerns: "Without prejudice to such general principles as may be agreed upon by the international community, or to the criteria and minimum levels which will have to be determined nationally, it will be essential in all cases to consider the systems of values prevailing in each country and the extent of the applicability of standards which are valid for the most advanced countries but which may be inappropriate and of unwarranted social cost for the developing countries".

The Action Plan accompanying the Stockholm Declaration recommends that "Governments of the developing countries consider fully the new opportunities that may be offered to them to establish industries and/or expand existing cause of environmental considerations", and urges the Secretary-General to "undertake a full review of the practical implications of environmental concerns in relation to distribution of future industrial capacity and, in particular, to ways in which the developing countries may be assisted to take advantage of opportunities and to minimize risks in this area". The brief summary of the general debate of the Conference made no mention of redeployment.

This omission is rather surprising in view of the fact that the preliminary discussions leading to the Conference had taken into account the possibility of redeployment of industrial capacities from the developed to the developing countries on the grounds of the stricter environmental controls in the former. For instance, in the Report and Working Papers of the Panel of Experts on Development and Environment, convened by the Secretary-General at Founex, June 4-12, 1971 (The Founex Report), there were quite a few references to redeployment. The main report stated categorically that the issue of "the opportunity for relocating industries with pollutive implications in the developing countries" was "considered at some length". Regretting that "this whole subject bristles with controversies", the Founex Report, in fact, made some recommendations.

Also, the Secretariat of the United Nations Conference on Trade and Development (UNCTAD) tried to draw the attention of the Stockholm Conference to the direct and indirect effects of environmental issues on international trade. The paper stated that the great diversity of national environmental regulations might in many cases lead to a fragmentation of the international market. It specifically envisaged that the financial implications of environmental measures would result in structural changes and large-scale re-allocation of resources as well as changes in production processes, location of industries, etc. Offering tentative estimates of the costs of compliance with existing and pending environmental standards (5 to 10 per cent rise in costs of production and 5 to 10 per cent growth of capital expenditure in major industries), the paper called for the
complementary development of efforts in the field of improving the human environment and of the international development strategy\(^6\).

The Secretariat of the General Agreement on Tariffs and Trade (GATT)\(^7\) had actually offered detailed figures (primarily for the United States) on the price increases of all goods and services resulting from compliance with certain anti-pollution measures. On the authority of a Leontief model, the paper suggested:

"That, although the average price increase necessary for industry as a whole to recoup its P.C. (Pollution Control) costs would not be more than a few percentage points, it would vary widely from industry to industry. In individual cases, prices might rise by as much as 10, or even more, per cent. Within these orders of magnitude, the international differentials in the additional costs for such an industry as iron and steel, for example, could amount to 3 to 5 per cent. It has been our experience that international trade responds fairly promptly to much smaller international price differentials\(^8\)."

It would indeed be instructive to find out how international trade in fact responded to price differentials in different countries on account of the increased costs of implementing stiff environmental regulations in advanced industrial countries. Has there been a virtual flight of pollutive industries to environmental havens? If one succeeds in detecting some evidence of this, is it possible to account for it solely in terms of pollution controls? One may find answers to these questions examining the concept of redeployment and the controversy surrounding its range and meaning.

II. Conceptual Framework

1. Definition and scope

The United Nations Industrial Development Organization (UNIDO) defined redeployment "as the transfer of productive capacities from a developed to a developing country on the basis of mutual interest in order to achieve a better international allocation of resources. In other words, certain productive capacities, which have gradually become less viable in developed countries owing to long-term changes in demand and increases in raw material, environmental and social costs, will be transferred to developing countries, while the developed countries switch to other activities in the industrial or economic sectors". Describing the process as "evolutionary restructuring", the report envisaged industrial redeployment as entailing the transfer or supply of one or more of the following components: capital, technology, skills, equipment, and management services, as well as research and development. It might also entail, the report added, granting the products of the newly established plant access to the original market; while marketing services, sub-contracting and other arrangements may also be provided\(^9\).

The UNIDO definition and clarification of the concept of redeployment of industries clearly demonstrate its scope and the source of misgivings about it.
The ideal of "transfer of productive capacities .. on the basis of mutual interest in order to achieve a better international allocation of resources", translated into actualities is identified as those "productive capacities, which have gradually become less viable in developed countries owing to long-term changes in demand and increases in raw material, environmental and social costs ....". The cynic is prone to substitute the phrase non-viability of productive capacities "owing to long-term changes in demand" with one word: obsolete. The other justifications, namely, increases in raw material, environmental and social costs, are equally liable to be scoffed at by the cynic as a strategy to utilize the cheap sources of raw material and labour in poor countries, and to misuse the "absorptive capacity" of their environment by transferring the pollution problems of the rich countries to the poor countries.

These cynical misgivings did find adequate expression both in the replies furnished by Governments to a UNIDO questionnaire on the scope of redeployment of industries and in the debates over the notes prepared by the UNIDO secretariat[11]. To be fair, the secretariat's notes had placed the whole question in the right perspective. Summarizing the responses of some companies, a UNIDO note (ID/B/190) stated "that the concept of redeployment was open to varied and broad interpretation"[12], and that since neither the Lima Declaration and Plan of Action nor the General Assembly resolutions had elaborated the concept in detail, there was a need to "refine the concept". The note further formulated the following issues for consideration:

(a) Redeployment should be more closely linked to the achievement of the industrial production target as well as to the negotiations and consultations provided for in the Lima Declaration, and as envisaged in section IV, paragraph 3, of General Assembly resolution 3362 (S-VII);

(b) Redeployment should be an intrinsic component of the evolutionary industrial restructuring taking place in the industrialized countries;

(c) Rather than being regarded as an ad hoc activity on the part of individual entrepreneurs, redeployment might be seen as a government policy stemming from a deliberate endeavour and genuine desire to phase out certain industrial activities or to limit the expansion of selected industrial sectors in favour of the developing countries, thereby contributing to a more equitable division of labour and the achievement of the target set in the Lima Declaration;

(d) Redeployment might be seen to involve decision-making in the industrialized countries at two levels: (i) a decision by the entrepreneur to transfer productive capacity to a developing country, thereby contributing to its development while himself deriving certain benefits; and (ii) a decision by the government to establish a climate conducive to redeployment by offering appropriate incentives;

(e) Redeployment might be interpreted as including the transfer of used equipment. This might have implications for countries that at present encourage or restrict the importing of such equipment. Thought might also be given to the possible implications of the purchase and sale of used equipment in
terms of repair and maintenance requirements, production costs, de-
preciation and service life of equipment in the developing countries, and the
possible transfer of outdated technology;

(f) Redeployment should embrace more than the redeployment of certain
existing physical units. It should include the deployment from industrialized
countries to developing countries of technology, know-how, equipment,
capital and other production factors essential to the creation of new in-
dustrial capacities in those countries.

In the note submitted by the UNIDO secretariat on 28 March 1978 it was
suggested that redeployment should be viewed as "a form of international in-
dustrial co-operation for resource transfers aimed at establishing productive
capacities in the developing countries with a view to increasing these countries’
share in total world industrial production on the basis of each country’s factor
and skill endowment, development objectives and other socio-economic con-
siderations". The third note presented on 28 February 1979 sought to
synthesize the seemingly conflicting views of the parties involved in the rede-
ployment process, which will be considered at a later stage. One may now
examine the views of the parties involved in the process.

2. Redeployment revisited in the context of industrial growth

If the Stockholm deliberations and the Principles and Plan of Action that
emerged out of it were to be taken as a guide, redeployment as a working
concept could not but be regarded as having been still-born. The idea, however,
surfaced again in a different context in 1975.

At the Seventh Special Session of the UN General Assembly on "Development
and International Economic Co-operation", held in September 1975, the rede-
ployment of industrial productive capacities to the Third World appeared under
the heading of Industrialization. Developed countries were there called upon
to adopt new policies which would encourage, inter alia, the redeployment of
industries, less competitive internationally, to developing countries, thus leading
to structural adjustments in the former and a high degree of utilization of
natural and human resources in the latter. Redeployment was sought to be
shown to be consistent with the economic structure and the economic, social,
and security objectives of the developed countries, and with the need for such
industries to move into more viable lines of production or into other sectors of
the economy. The resolution adopted by the Special Session, moreover, urged
that consultations should take place at global, regional, interregional and sectoral
levels under the auspices of the UNIDO.

In a specific resolution on the subject adopted on 21 December 1976, the
General Assembly urged developed countries to implement fully the relevant
recommendation made in the Sixth Special Session resolution. This resolution
had requested the Executive Director of the UNIDO to prepare studies which
would include:

"(a) Recommendations concerning an interrelated set of policies, taking into
account environmental and labour market conditions and including financial
and trade measures for promoting redeployment, as well as the economic
structure and the economic, social and security objectives of the developed
countries and the principle of permanent sovereignty over their natural re-
sources;

(b) The identification of specific industries and sectors of industries which
would be amenable to accelerated redeployment to developing countries

The above resolution was, in a way, a follow-up to the Lima Declaration and
Plan of Action\textsuperscript{17} which, in the context of co-operation between developing and
developed countries, had called for:

"Urgent consultations ... with a view to facilitating within a dynamic con-
text and in accord with authorities available to Governments, the redeploy-
ment of certain productive capacities existing in developed countries and the
creation of new industrial facilities in developing countries ...". (Para. 61 (d)).

The most recent resolution of the UN General Assembly, adopted on 15
December 1978\textsuperscript{18} placed the issue of redeployment in the wider perspective of
industrial development co-operation, and requested the Executive Director of
the UNIDO to submit a comprehensive and analytical report on industrial rede-
ployment in favour of developing countries, taking into account its earlier re-
solution 31/163.

3. The debate\textsuperscript{19}

The concept of redeployment of industries from the developed to the developing
countries was considered at the thirty-first session of the General Assembly.
Subsequent to that debate, the question was examined by the board of UNIDO
at its eleventh session\textsuperscript{20}, held from 23 May to 6 June 1977, and by the ESCAP
Meeting of Ministers of Industry\textsuperscript{21} in November 1977. Concomitant with these
deliberations, the UNIDO had conducted a monitoring exercise indicating the
policy measures taken by industrial Governments in regard to redeployment and
the progress achieved by Governments and international organizations towards
implementing the Lima Declaration and Plan of Action\textsuperscript{22}. The deliberations and
the monitoring exercise show a broad consensus on the desirability of redeploy-
ment: that it could constitute a valuable contribution to the process of industri-
alization in the developing countries, that it was an essential aspect of inter-
national co-operation, and, as such, should be viewed in the context of the new
international division of labour and of the new international economic order.

The consensus dissolves if one deals in details.

Many developing countries considered that redeployment should not lead to a
mere relocation of non-profitable, obsolete or polluting industries and that the
aim of redeployment should not be to facilitate traditional activities of large
enterprises, especially transnational corporations. Some of these countries appre-
hended disruptive effects of redeployment upon social and economic conditions
in developed as well as developing countries. The developing countries generally
endorsed the view that redeployment of industries ought to be executed at governmental level, and that it should be dealt with in the framework of medium- and long-term development and restructuring of the world economy and not, it was said, as certain developed countries seem to think, solely in the interest of developing their own economies. Redevelopment was conceived of as a modality to divert production factors from traditional sectors to new, higher technology industries. It was seen further as a means of transferring industrial capacity from the centre to the periphery, and as a method to obtain optimum utilization of resources aimed at satisfying the developing countries' domestic markets and at developing a national labour force.

The developing countries regarded redeployment as a means to enable them to undertake as much processing as possible of the raw materials they exported, bearing in mind the need to protect the environment. Another aim, it was stated, ought to be import-substitution in local and regional markets. Redevelopment was further understood in terms of gaining access to the markets of developed countries for the products so produced, and the developed countries were urged to remove tariff and other barriers for such products. Redevelopment, it was emphatically affirmed, should not lead to the exhaustion of natural resources of the developing countries. It was generally held that redeployment had to meet the industrial aspirations of the developing countries and should conform to their socio-economic objectives.

Most developed market economy countries, on the other hand, held the view that redeployment should be part of an evolutionary economic restructuring process of domestic industries in response to market forces rather than the result of planned action or negotiation by Governments. In this connection, it was stated that in the market economy countries most decisions regarding location of industry and redeployment were taken mainly by individual enterprises, and that the only means available to Governments were indirect, such as incentives. Nevertheless, a few developed market economy countries did express the view that redeployment was one of the most constructive ways of improving the industrial potential of developing countries, and that a broad range of incentives for redeployment already existed, such as fiscal and financial measures, credit facilities, investment information and promotion, subsidized preinvestment studies, investment insurance schemes, guarantee arrangements and investment protection agreements covering commercial and non-commercial risks. Although these measures would go a long way in creating a climate favourable to redeployment, it would be inadvisable to overestimate the abilities of Governments of developed market economies to influence directly structural changes, since specific decisions regarding redeployment would be finally made by concerned entrepreneurs on practical market considerations.

As against the above, the developing countries argued that redeployment should not be exclusively a business exercise governed by the laws of the market, but should essentially be the subject of Government policies designed to share industrial capacities, and that it called for deliberate political decisions. It was pointed out that increased export in developing countries implied increased capacity to import capital and manufactured goods; it was therefore in the interest of both to encourage redeployment. The argument was also made that the indifference of Governments in developed market economies had led to
sporadic redeployment dependent largely on the ambitions of large-scale international capital and transnational corporations which used the process for their own exploitative ends. Governmental interference in such activities, not only by the host countries but also by the home countries, was imperative.

The UNIDO monitoring exercise over action taken and progress achieved towards implementing the Lima Declaration and Plan of Action reported, however, that a number of policies and co-operation agreements adopted by the developed market economy countries had relevance for industrial redeployment. Austria, Belgium, the Federal Republic of Germany, Japan, Norway and Sweden, for instance, had initiated forecasts of long-term structural adjustment problems and were attempting to identify industries that might be suitable for future redeployment. Most Governments of the developed market economy countries reported that they had adopted policy measures conducive to foreign investment in developing countries. A common feature of these foreign investment policy measures was that they were conditions upon having such investment in harmony with the development objectives of the host countries. Transfer of technology, trade liberalization, preferential treatment for industrial imports from developing countries and a host of other measures were cited in this connection. But, as the UNIDO report suggested, "although such measures may indirectly encourage imports of industrial products from developing countries, the policies being pursued at present in developed market economies did not appear to link specifically domestic structural changes to actual redeployment of production facilities to developing countries".23

The centrally planned economy countries indicated that they were not in a position to commit themselves to encourage specific forms of redeployment of certain industries in developing countries as they were pursuing policies aimed at the promotion of industrialization in the developing countries along slightly different lines and would continue to do so in the future. According to their thinking, the establishing of new industries should form part of the national development plans of developing countries and should not depend upon foreign initiatives alone.

The UNIDO monitoring report stated that the centrally planned economy countries had largely adopted a bilateral approach to co-operation with developing countries. Some of their bilateral agreements with developing countries included compensatory arrangements as a means of stimulating the development of export-oriented sectors of the developing countries' economies. Long-term credit was given to promote the foreign trade of, and industrial co-operation with, the developing countries. Such credit was also granted by the centrally planned economy countries to financial institutions and enterprises in developing countries.

4. The UNIDO synthesis

On the basis of the responses of Governments to its earlier definition of redeployment, the UNIDO reformulated its thoughts. The concept is defined later as "a form of international industrial co-operation for resources transfers aimed at establishing productive capacities in the developing countries with a view to increasing these countries' share in total world industrial production on the basis
of each country’s factor and skill endowment, development objectives and other socio-economic considerations. The actual realization of the objective, according to the latest UNIDO note on the subject seems to run into difficulties on account of (a) a kind of communication gap between those that are in a position to redeploy the industrial capacity and those that wish it redeployed to their countries; (b) lack of a functioning mechanism by which the priorities of the developing countries and the development potentials of industry in the developed countries could be matched; and (c) failure to develop anticipatory adjustment policies in the developed countries facilitating redeployment of industrial capacities to the developing countries.

In order to overcome the above constraints, it is necessary to realize that redeployment of industries may be mutually advantageous if conceived in a proper way. The UNIDO found that the problems posed by redeployment warranted deeper study and that, on the basis of the early stages of its research programme, it was not in a position to present (by January 1979) a set of final recommendations. Nevertheless, the organization outlined certain tentative suggestions as follows:

"58. It might be appropriate for the developed countries to conceive a more coherent set of policies affecting industrial co-operation with the developing countries. The adoption of such a set of policies should take account of the considerations set out below.

59. First, it is of fundamental importance that the Governments of developed countries create or maintain a general framework for enabling industrial enterprises to decide upon and engage in the redeployment of certain industrial capacities to the developing countries.

60. Secondly, it is essential that public support be provided for this redeployment process. Such support might take the form of credit and investment guarantee systems, several types of which already exist in many developed countries. Another form might be the establishment in the developed countries of a public fund equity investment in the developing countries. Such a fund would permit further investible resources to be borrowed on the capital market and could also prefinance relevant market studies and preinvestment studies in developing countries. The fund could be used to encourage industrial redeployment by providing the initial momentum that would enable an interested entrepreneur (a) to obtain essential data, (b) to establish requisite contacts with authorities in the developing countries, and (c) to enter into a financial commitment on behalf of the public body. It would thus seem possible to combine the efforts of the entrepreneur and the resources of the public fund, on the one hand, with the local resources of the particular developing country, on the other. It would also be possible to couple certain Government controls and guarantees with the provision of capital to an investment project. In any case, a close scrutiny of the individual investment projects by an official agency would seem necessary. There are indications that a public fund engaging in equity investment might encounter difficulties in providing sufficient staff for the required control function. However, an international
or regional institution might be entrusted with this function on behalf of the
public fund.

61. Direct official bilateral assistance may be seen as a further essential form
of official support of redeployment. By increasingly directing bilateral assist-
ance towards long-term industrial co-operation, it would be possible -
jointly with the developing country concerned — to supplement enterprise
resource flows, for instance, by providing training and funds for an appro-
priate infrastructure in the developing country.

62. Thirdly, it would seem to be a basic requirement that developed coun-
tries ensure access to their markets for manufactures from the redepolyed
capacities in the developing countries, especially if the capacities are con-
ceived as export-oriented industries. Besides lowering the market barriers, it
may be important to provide assistance to developing country enterprises in
marketing the products and in gaining access to distribution systems.
Various measures for further ensuring market-access, such as "buy-back",
bilateral production-sharing arrangements, and the policies being pursued by
international bodies in respect of (a) GSP and (b) agreements of the
Lome-type might be considered.

63. Fourthly, anticipatory adjustment policies constitute a crucial pre-
requisite for an accelerated and non-disruptive redeployment process. On
the basis of expected changes in industrial processes and products, the devel-
oped countries could undertake measures for directing resources towards
human capital intensive industries rather than subsidizing ailing industries.
The establishment of "early-warning systems" to induce timely adjustments
may constitute a specific measure in this regard. Recognizing that, among
other factors, the relatively high wages in developed countries tend to
promote the development of labour-saving technologies in manufacturing, it
seems inevitable that the concept of full employment will have to be rede-
fined in these countries. To this end, an employment-creating policy in the
service sector and the possibility of reducing labour supply by regulating
working times, etc. might be considered. It may happen that, for various
internal reasons, developed countries will decide to exclude certain parts of
their manufacturing activities from further rationalization and/or interna-
tional division of labour. Such a decision should be based on a thorough
investigation of the preconditions and long-term implications of such a
policy. In particular, it would seem to be a precondition that the appli-
cation, scope and duration of such policies be based on consultations with
the partners in international co-operation likely to be affected. Negative
effects for developing countries arising from a protectionist measure in a
developed country would need to be compensated for. An international
consultation and reconciliation forum may be required for ensuring this.

III. Assumptions and Practice

From the foregoing analysis it is clear that redeployment of industrial capacities
in favour of the developing countries is a complex and sensitive matter. It is
premised upon certain assumptions that are basic to the whole process. The first
such assumption is that rapid industrialization of the developing countries is clearly in their interest as well as in the interest of the developed world. A brief examination of this postulate reveals a certain amount of difficulty. To start with, one is at once confronted with the perennial problem of industrialization as a means of development. There is the further difficulty of resolving the doctrinal (or doctrinaire) controversy involving advocates of growth, balanced growth, and so on. Even if one skirts the whole debate, one still will have to wrestle with some problems which, admittedly, are not entirely insuperable.

The Lima Declaration,27 shorn of its routine references to colonial domination, apartheid and the like, contained useful indications to the understanding of the problems mentioned. To excerpt some of the Declaration's salient features, it stated that "peace and justice encompass an economic dimension", one of the prominent features of which was the underdevelopment of 70 per cent of the world population, which, in turn, generated less than 7 per cent of the world industrial production. The Declaration, therefore, solemnly affirmed its

"firm conviction of the role of industry as a dynamic instrument of growth essential to the rapid economic and social development of the developing countries, in particular of the least developed countries" (para. 23).

The Declaration proposed that the share of the developing countries in total world industrial production "should be increased to the maximum possible extent and as far as possible to at least 25 per cent of total world industrial production by the year 2000, while making every endeavour to ensure that the industrial growth so achieved is distributed among the developing countries as evenly as possible" (para. 28; emphasis supplied). The italicized section of this laudable goal indeed presents the problem.

To attain the 25 per cent share in world production by 2000 A.D., an UNCTAD study calculated,28 the developing countries will have to maintain an annual growth rate of over 11 per cent per year - compared with the growth rate of 6.6 per cent attained during the period 1960-1972 - or in other words, their manufacturing output would have to be 20 times the output achieved in 1972. The study further maintained that it would be impossible to attain such a pace without at the same time achieving an acceleration in output growth sectors, such as agriculture, forestry, mining, transport and communication. Despite these and other difficulties, the UNCTAD study maintained, it must be said to its credit, an optimistic note.

It is the even distribution of the industrial growth envisaged in the Lima Declaration, however, that poses a major problem. It is well known that nearly 70 per cent of the world population lives in developing countries. What is less noticed is that a majority of the developing countries have a population of less than 5 million. However, a great number of the total population of the developing countries lives in countries with more than 5 million inhabitants, a population size that is sufficient for most types of industrial production. In 1972, the average population of 113 developing countries was about 16 million, compared with 30 million in 25 developed countries. No correlation could thus be established between the size of population and the degree of industrialization either in the developed or developing countries. But, in terms of international
trade in manufactures, industrial capacity in the developing countries is obviously concentrated in a few hands.

A profile of exports of manufactured goods from developing countries to the developed market economy countries prepared by the UNCTAD secretariat was revealing. The study examined the pattern of exports of 422 products and observed that in the case of a group of 50 products the developing countries enjoyed a very substantial comparative advantage inasmuch as they were resource-based finished and semi-finished manufactures as well as labour-intensive. Exports of such products had shown a fast growth between 1970 and 1976. But, only a handful of developing countries accounted for as much as 63 per cent of the increase; while the 50 products out of 422 accounted for 79 per cent of the total increment, the 10 top-ranking products alone accounted for 44 per cent. A great majority of the developing countries, thus, had not benefited by the growth in trade in manufactures from the developing countries to the developed, or in other words, in the growth in the industrial capacity in the developing countries.

The UNCTAD study further pointed out that among the 126 products with a market share increase between 1970 and 1976, 30 belonged to the group of 50 major products mentioned in the preceding paragraph. A scrutiny of the products registering high growth rates revealed that, for the developed countries, it was no longer realistic to treat imports of manufactures from developing countries as consisting merely of labour-intensive or resource-intensive products. Increasingly, the study concluded, both capital-intensive and technology-intensive products appeared among the exports of manufactures from developing countries, which meant that industrial capacity was likely to expand in that direction.

In the total increment in the export of manufactures, between 1970-1976, from the developing countries to the developed, nearly 70 per cent of the slice went to just six of the nearly 120 developing countries!

Viewed differently, the developing countries that have the resource base for fast industrial expansion are, again, few in number. The share of the developing countries in the total production of bauxite for world market, for instance, is 71 per cent. Just four countries account for 58.5 per cent of that share. In the case of iron ore, 5 developing countries account for 33.4 of the total 39.7 per cent of the world exports. It is well-known that in the exports of petroleum a small group of developing countries control a large percentage of exports. The figures are: 11 countries export 68.2 of the total 83.5 per cent share of the whole developing world. In manganese, phosphate, tin and copper, the number of developing countries accounting for the largest developing country exports is, respectively, six, six, six, and six!

The structure of production and refining in these developing countries, where the question of industrial capacity comes in, is equally distorted. Multinational corporations control many of the most important export products of developing countries and a very high proportion is exported on an intra-firm basis. Less than 10 MNCs are involved in the bulk of world production and processing of copper, iron ore, nickel, lead, zinc, tin, tobacco and tea, while in the case of bauxite the
The whole of the Dominican Republic's and Haiti's bauxite exports are handled by a single MNC.  

On the basis of a penetrating study of the ownership of production and the interaction of multinational corporations located in the EEC countries with the ACP countries under the Lome Convention, Mytelka came to the disturbing conclusion:

"At first glance, therefore, although the growth of manufacturing industry in Third World countries and especially the growth of manufactured exports appears to many as a desirable objective and its increase is taken as an indication that Third World countries are becoming 'developed', this impression is clearly misleading. Much depends upon the ownership structure of this new industry. To the extent to which new industry forms an integral part of an internationalized system of production, there is only the smallest possibility that it will contribute to the promotion of greater congruence between the domestic structures of Third World demand and production, provide the internal dynamic for autonomous growth or reduce the segmentation and disarticulation of Third World political economies. On the other hand, insofar as the EEC countries are concerned, there is every reason to expect that the Lome Convention will strengthen the position of EEC multinationals in their competition with U.S. and Japanese firms. To the extent that it furthers the internationalization of production, the Lome Convention will contribute to the emergence of Stephen Hymer's new International Division of Labour - an international division of labour which cannot but perpetuate the uneven development of the old." 

The above observations lead to the conclusion that redeployment of industrial capacity in favour of the developing countries must take into account the existing pattern of industrial strength in those countries, which is characterized by heavy concentration of industries in only a few. Redeployment, therefore, will be desirable in favour of the least industrially developed countries. From the point of view of environmental proprieties also such a course will be highly advisable. For, those developing countries that are industrially-speaking relatively advanced show signs of serious environmental problems. The cities in India, for instance, where industries are concentrated have about the same level of air and water pollution as the worst examples in the U.S.A. or Europe. Unless these countries demonstrate serious intentions of relocating their industries, which is not easy given the prevalent conditions of location of raw materials and transportation, it would constitute a disservice to further enhance their industrial capacities by bringing pollutive industries from elsewhere because it may mean aggravation of their environmental problems. On the other hand, the least industrially advanced of the developing countries will have no environmental problems, of at least the kind associated in industrialization. For that reason, and for reasons of the over-all development of the least developed countries, which has received in recent years growing awareness and urgency, redeployment of industries must be considered in their favour.

Another basic assumption that calls for closer scrutiny relates to the cost differential favouring redeployment of industry. It was seen in the preceding pages that the developed countries were reluctant to interfere in the interplay of free
market forces on the apparently logical assumption that the cost differentials in the application of pollution control costs and the comparative freedom an industry enjoys on that score in the developing countries with less rigorous pollution control standards was such that the industry would naturally start thinking in terms of redeployment. The GATT note referred to in the section dealing with the Stockholm Conference did, in fact, predict response from industry in that direction34. But, in recent times the assumption does not seem to be well-grounded.

The OECD has made studies on pollution control costs in the aluminium, iron and steel, pulp and paper and fertilizer sectors. These studies indicated that pollution control costs were not yet a very large component of sale prices; for example, they ranged from two to six per cent of the average selling price at the end of 1972 for the main iron and steel products. If, however, the U.S. standards set for the year 1983 were applied, these costs might in many cases rise to as much as 25 per cent of prices. The studies make it a point to state that the determination of actual enterprise costs was difficult or practically impossible because such data were generally treated as strictly confidential. The studies nevertheless affirm that the cost differentials of pollution control expenditures might provide a considerable opportunity for developing countries to increase their competitive strength and to introduce new industrial capacity for export.

Taking into consideration the OECD studies, the UNCTAD/UNEP group of experts on the trade aspects of environmental policies and measures35 emphasized the need for case-by-case studies of industrial redeployment opportunities. Such studies are planned by the two bodies and, when made, will surely provide better clues to the understanding of the problem of redeployment. In the meantime, an impressionistic survey of the studies already made will show that the issue does not lend itself to great generalizations.

Pulp and paper

The pulp and paper industry, often considered with some justification as a “gross polluter”36, is supposed to involve heavy capital investment to install environmental protection facilities. A OECD report estimated that during the period 1971-75, approximately 3,000 million (U.S.) dollars, at the 1970 cost level, would be required by the pulp and paper industry in OECD countries, to finance pollution control facilities for those mills that were operating in 1970. The information, where available, indicated that approximately the same funds would be required for the second half of the decade. When allowance is made for cost escalation, and for non-OECD countries, it may be estimated that the capital requirement for the worldwide pulp and paper industry to finance pollution control installations in this decade is about 10,000 million (U.S.) dollars.

To put it differently, the pulp industry would need some 40 per cent more funds to finance pollution control investments, in addition to those needed for increased production capacity, between 1970 and 1980. The corresponding figure for newsprint was 20 per cent and for paper and board 10 per cent.
Aluminium

Aluminium presents a different picture\textsuperscript{37}. The first factor that warrants notice is that in the decade 1963 to 1973 world production of primary aluminium increased at an annual rate of 8.5 per cent. During this decade world primary aluminium production more than doubled from 5,862 thousand tons to 13,286 thousand tons, an increase of over 127 per cent. It is important to note that this increase in production occurred on a truly worldwide basis. The greatest per cent increase during this period was in South America which experienced a ten-fold boost in production. Oceania (Australia, New Zealand) experienced a four-fold rise in production. Asian production more than quadrupled in this period, moving from 431 thousand tons in 1963 to 1,771 thousand tons in 1973. In this period North American and European production increased 85 and 124 per cent respectively.

The base metal, bauxite, is obtained mostly in Jamaica, Haiti, Costa Rica, Surinam, Guyana, French Guiana, Brazil, Ghana, Guinea, Sierra Leone, Cameroon and Sumatra, Java and Borneo in Indonesia. A number of Near and Middle East countries are planning to erect new or additional primary aluminium capacity, including: Iran, Iraq, Kuwait, Saudi Arabia, Qatar, Abu Dhabi and Algeria.

Motor vehicles\textsuperscript{38}

The mix of mobility and environmental quality in developing countries, again, presents a complex picture. It is well-known that during recent decades the motor vehicle population in industrialized countries has increased rapidly and continuously. In the 60s, more particularly, the world population increased by less than 20 per cent, but the number of motor vehicles by more than 100 per cent. The pace of growth, however, has varied considerably among countries. While the increase from 1960 to 1970 in countries with comparably high levels of car ownership was 50-100 per cent, it was higher in others, for example in Italy 360 per cent, Spain 585 per cent and Japan 720 per cent. The rate of increase of vehicle registrations, approximately 12 per cent per annum in the industrialized countries as a whole in the early 70s, has slowed down considerably since 1973.

A quarter of the gains made in recent decades was in the developing countries. One feature of the picture of the motor vehicle in developing countries that might be mentioned in passing is that whilst passenger cars account for 80 per cent of motor vehicles in the industrialized western countries, they average only 55 per cent of the total in developing countries. Moreover, they are heavily concentrated in a few urban areas. But the fact more relevant to the present enquiry is that although the large cities in developing countries have fewer vehicles per head of population than in more developed countries, they often have more vehicles than the cities of developed countries. Brazil, for instance, has only one car for 61 people, but São Paulo, the largest city, has one car for 6 people, compared with one for 5 persons in New York city. Projections, made in 1972, for world motor vehicle trends, although subsequently proved exaggerated in view of the energy crisis of 1973, showed that the imbalance of car ownership
between developing and developed countries, which even during the last decade had begun to change, will continue to narrow. Another feature pertinent to the present discussion is that slow economic growth, high oil prices, and increasing costs for motor vehicles have led to a decrease in demand for new cars in the industrialized countries. It is forecast that some plants will have to operate at reduced capacity, others will disappear. The difficulties of the motor vehicle industry are further compounded by the demands of environmental protection and resource conservation. Such demands have a direct impact on vehicle design and on the number of vehicles produced. These changes, predictably, necessitate diversification from the private passenger vehicle to other areas of transportation. They may also lead to relocation of the industry itself.

Unhappily, the last mentioned alternative does not seem to be well within the realm of easy possibility. The motor vehicle industry enjoys special protection in all countries. In developing countries the protectionist policies are more severe. Moreover, developing countries, for justifiable reasons, have begun concentrating on evolving low-cost vehicles. Some of them, India for instance, have achieved a high degree of skill and technology in the field, and are on the way to exporting vehicles of this kind to other developing countries. In the circumstances redeployment of the motor vehicle industry from the developed to the developing countries does not seem to be a promising possibility.

True, the above survey of individual industries is too sketchy and impressionistic to lend itself to a meaningful conclusion. But the point is, that one needs to build up an array of more such individual case studies of industries before one makes an argument in favour of, or against, the basic assumption that redeployment is inevitable because of the cost differentials involved.

Preliminary investigations made by the UNIDO show that there is possibility for redeployment in the industries relating to basic metals; building materials; chemicals and petro-chemicals; construction and mining equipment, electrical engineering; food; leather, leather products and footwear; mechanical and other engineering; miscellaneous light industries; Pharmaceuticals; photographic equipment; precision equipment; pulp and paper; rubber; textiles and clothing; and wood processing. The investigations also reveal that the “prime motive” for redeployment of industries was “the prospect of obtaining easier access to markets in those countries or safeguarding their sales there. A further significant motive was the comparatively low production costs in the developing countries. Other contributory factors, (it is worth noting) such as concern about raw material supplies, the stricter application of environmental regulations, and labour shortages in the industrialized countries, were not accorded the same degree of importance”, the UNIDO note significantly added (emphasis supplied).

A recent OECD report on environment issues, in fact, comes close to exposing the whole argument as a myth. Presenting an optimistic picture of the ecological achievements of its 24 member countries, it states that anti-pollution policies cause only modest price increases and have little impact on inflation and employment. Mr. Costle, who chaired the OECD meeting of ministers to
study critical environmental problems and ecological challenges, held in Paris on 7 May 1979, is reported to have stated that a U.S. study indicated "that 8 billion Dollars a year is being saved in increased productivity because of reduction of chronic illness caused by air pollution - reductions that cost about 6.7 billion Dollar", and that "U.S. cleanup costs add less than 0.2 points per year to the consumer price index". Japan and Norway are said to have had similar records43.

The above survey of industries with a potential for redeployment reveals that the chances in that direction are not bright. Firstly, environmental protection costs do not appear to be high enough for the industry so seek avenues of escape. Initial estimates of growing costs with increasingly stiffer standards of pollution control seem now to be exaggerated. In any event, it appears to be almost impossible to determine, as the OECD studies indicate, the actual enterprise costs to enable one to make meaningful forecasts of possible redeployment of industries. All this only adds up to the conclusion that decisions to redeploy industries in developing countries, if left purely to private enterprises, might not result in actual accretions to the industrial capacities of the developing countries. Some help from the governments concerned seem to be clearly warranted as the Lima Declaration envisaged:

"That the unrestricted play of market forces is not the most suitable means of promoting industrialization on a world scale nor of achieving effective international co-operation in the field of industry and that the activities of transnational corporations should be subject to regulation and supervision in order to ensure that these activities are compatible with the development plans and policies of the host countries, taking into account relevant international codes of conduct and other instruments" (para. 42).

"That countries, particularly developed countries, should undertake an objective and critical examination of their present policies and make appropriate changes in such policies so as to facilitate the expansion and diversification of imports from developing countries and thereby make possible international economic relations on a rational, just and equitable basis" (para. 27)44.

IV. Conclusions

From the foregoing analysis it is evident that redeployment of industrial capacities in favour of the developing countries is a delicate problem warranting careful calculation and balancing of interests of both the parties involved. Conceived in terms of the global growth of industry on an equitable basis the idea is obviously unassailable. But its actual realization seems to be beset with problems. Most of the industry with the ability and the need to redeploy is in the hands of private enterprise in the developed countries. Mostly, private business takes decisions on cost-benefit analysis. If pollution control costs in developed countries are high - which is not clearly the case, at least, in all industries - it would be interested in redeploying some of its capacities in places where the costs will be nil or lower. But, pollution control costs are only one of the many advantages that the industry will take into account. Other factors,
which cumulatively are called the good or stable investment climate, will play a large role in the industry's decision.

The Governments of developed countries can and do provide incentives, discussed earlier, to encourage redeployment of industries. The motivation, often, is not wholly altruistic. Hard calculations of profits for the industries, greater employment and the like, provide incentives. One of the other positive factors could be promotion of international industrial co-operation amongst nations. Negatively, the motivation could also be the reduction of pressures on their already saturated environmental absorptive capacities. On the other side of the bargain, the developing countries will be equally concerned with be hard realities of their own industrial growth, more employment for their own people, etc. The foremost consideration, as was made clear in the debates in, and communications to, the UNIDO, will be a measurable contribution to their developmental goals.

The developing countries will be, therefore, interested in creating appropriate investment climates in only those spheres of industry which, in their judgement, are likely to promote their developmental goals. An UNCTAD study, prepared by V. Ranganathan45, postulates possibilities of redeployment in the case of India in industries such as fertilizers, selected pesticides, petro-chemicals, synthetic rubber, thermoplastics, detergent alkylates, certain drugs and pharmaceuticals, paper and pulp, asbestos packing, timber based industries, non-ferrous metals, iron ore, and selected ferro-alloys. More such studies of individual developing countries are necessary to find out the potentialities for redeployment46. Also, sectoral studies of individual industries not only in terms of pollution control costs but also investigating redeployment potentials on other than mere pollution control costs (like the ones made by the OECD) can facilitate a better allocation of industrial capacities in the world.

Pending such detailed examination, the conclusion seems inescapable that redeployment of industries in the developing countries on environmental considerations alone (i.e. to avail of the less rigorous or absent pollution control standards in the developing countries) is an idea that attracts scholars and bureaucrats more than the policy maker and the entrepreneur in the industrially advanced countries47.

The last but not the least important of issues confronting redeployment relates to the legal norms that ought to govern the situation. The concept, of course, is of recent origin. One can hardly find any lex lata on the subject. The resolutions of the UN General Assembly and the guidelines evolved by the UNIDO and UNCTAD deal with the promotion of industrial capacities in the developing countries and, one can even take the position, are attempts at fostering international industrial co-operation through, inter alia, redeployment. But it would be wrong to posit those instruments as creating mandatory obligations on the part of the industrially advanced nations to redeploy their excess or pollutive industrial capacities to the developing world. Nor do these instruments make it obligatory for the developing countries to consider establishing such industries in their countries. The instruments, at best, create an obligation to co-operate in the field.
The more intractable motivation of redeployment of industries primarily or mainly to transfer pollutive industries from a saturated environment to areas that have not reached the threshold, presents quite a few knotty legal problems. Since industrial capacities cannot be transferred without agreement of the state-parties concerned, the process is obviously voluntary. In such a situation, therefore, consent could be said to govern the situation. Under international law, a state can even extinguish its personality through consent. But a consent could be obtained through fraud or misrepresentation, etc., or could be given through ignorance. The relevant rules of treaty law would apply to such situations. The question is, can states launch upon redeployment of pollutive industries even with full knowledge and consent at all?

As far as direct situations of transfer of pollution are concerned, one could think of having recourse to the classical norm of international law, viz, sic utere tuo ut alienum non leadas. But, redeployment of industrial capacities cannot be subsumed under this rubric straight away. The process involves a deliberate trade-off: The developed country and the private enterprise gain by relieving the already saturated environment of the country and avoiding high pollution costs, respectively; and the developing country absorbs a small amount of assimilable pollution in order to enhance its much needed industrial capacity. If, however, the process exceeds the threshold limits of the absorptive capacity of the receiving country’s environment, can the country’s consent alone save the situation?

Consider, for instance, a developing country declaring itself openly or conducting itself clandestinely as a pollution haven. The economic advantages of adopting such a course might be many. Can it absolve itself of the legal duties that come into play? Do the developed countries that take advantage of such pollution havens not transgress the requirements of keeping the global environment clean? To put the second issue differently, is the obligation of states coterminous with their national boundaries?

Principle 21 of the Stockholm Declaration clearly stipulates that:

"States have, in accordance with the Charter of the United Nations and the principles of international law, ... the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States ...".

Recommendation 103 (a) of the accompanying Action Plan states: "As a general rule, no country should solve or disregard its environmental problems at the expense of other countries".

The above provisions were undoubtedly aimed at containing what has come to be known as transfrontier pollution. The thrust is admittedly different. But confining their application to transfrontier pollution but not to redeployment of pollutive industries, in regions already polluted, will create awkward legal anomalies. Such an interpretation would give rise to a position in which states would be barred from causing pollution across their boundaries through directional emissions of noxious industrial smoke in the air or effluents in interstate waters, but will be free to transplant such industries physically. In the latter case
(redeployment), the saving clause is the consent of the concerned state. Redeployment of industries in already saturated environmental conditions presents another legal anomaly. Article 2, paragraph 4, of the United Nations Charter, it is well-known, obligates member-states to conduct themselves in a manner that does not cause harm to the "territorial integrity or political independence" of each other. Does not the territorial integrity of a nation cover its environment?

The difficulty with the legal anomalies presented above is that a logical extension of the scope of the cited provisions of the Stockholm Declaration and the UN Charter will lead to the elevation of the emerging law of global environment drastically into a jus cogens. It is perhaps slightly premature to do that, and the behaviour of states, at least in the field of redeployment, hardly warrants it.
4.16. The enforcement of higher environmental standards in the developed countries is likely to raise the cost of production of several ‘pollutive’ industries such as petroleum and chemical industries, metal extracting and processing industries, paper and pulp industries. Such a development opens up an opportunity for the developing countries to move into some of these industries if their natural resource endowments, including relatively less used environmental resources, create a comparative advantage in these fields. Such efforts should not, however, lead to a disregarding of environmental standards adopted by the developing countries. Unfortunately, this whole subject bristles with controversies. There are those who argue vigorously that there should be no export of pollutive industries from the developed to the developing world. There are others who believe, just as strongly, that the opportunity for a better geographical distribution of industries must be seized immediately irrespective of any environmental costs. The elements of a sensible policy probably lie somewhere in the middle of these two extreme viewpoints. Firstly, industries which may be regarded as pollutive in some advanced countries because of their more limited environmental carrying capacity may well not be pollutive, or much less so, in the context of the developing countries with much less environmental pollution at present. Secondly, environmental standards and costs are likely to be quite different from the developed to the developing world, so that the developing countries may still possess comparative advantage in some of these industries despite the adoption of certain environmental controls in conformity with their own requirements. Thirdly, there is no reason why the developing countries should permit foreign investment, which comes to their countries into pollutive industries, to escape more stringent environmental standards back home if it results in a high rate of remittance of profits and even a lower net transfer of resources. In any arrangement that is made, it must be ensured that a) foreign investment is on favourable terms and conditions, b) it adds to the net transfer of resources, and c) it conforms to the environmental standards that the recipient country wishes to impose in the light of its own stage of development and its own cultural and social objectives. So long as these safeguards are provided, there is no reason why the developing countries should not increasingly specialize in certain industrial fields, both for home market production and export purposes, which are going to become more costly for the developed world because of their growing concern with environmental standards”. *Ibid.*, pp. 35-36. The Founex Report was incorporated into the Report by the Secretary-General under the same heading (Subject Area V): UN Doc. A/CONF. 48/10, Dec. 22, 1971, Annex I, at pp. 32-33. See also Knödgen, “Umweltzerstörung als Entwicklungsstimulus”, in: *Entwicklungspolitik im Umbruch* (Zürich, 1979), pp. 152-159.
7 “Industrial Pollution Control and International Trade”, reproduced in *ibid.*, pp. 201-225.
9 UNIDO, ID/B/182/Add. 1, May 12, 1977, 15.

Footnotes
2 See, *ibid.*, pp. 45-48, particularly p. 46, where the discussion on development and environment is summarized.
4 "4.16. The enforcement of higher environmental standards in the developed countries is likely to raise the cost of production of several ‘pollutive’ industries such as petroleum and chemical industries, metal extracting and processing industries, paper and pulp industries. Such a development opens up an opportunity for the developing countries to move into some of these industries if their natural resource endowments, including relatively less used environmental resources, create a comparative advantage in these fields. Such efforts should not, however, lead to a disregarding of environmental standards adopted by the developing countries. Unfortunately, this whole subject bristles with controversies. There are those who argue vigorously that there should be no export of pollutive industries from the developed to the developing world. There are others who believe, just as strongly, that the opportunity for a better geographical distribution of industries must be seized immediately irrespective of any environmental costs. The elements of a sensible policy probably lie somewhere in the middle of these two extreme viewpoints. Firstly, industries which may be regarded as pollutive in some advanced countries because of their more limited environmental carrying capacity may well not be pollutive, or much less so, in the context of the developing countries with much less environmental pollution at present. Secondly, environmental standards and costs are likely to be quite different from the developed to the developing world, so that the developing countries may still possess comparative advantage in some of these industries despite the adoption of certain environmental controls in conformity with their own requirements. Thirdly, there is no reason why the developing countries should permit foreign investment, which comes to their countries into pollutive industries, to escape more stringent environmental standards back home if it results in a high rate of remittance of profits and even a lower net transfer of resources. In any arrangement that is made, it must be ensured that a) foreign investment is on favourable terms and conditions, b) it adds to the net transfer of resources, and c) it conforms to the environmental standards that the recipient country wishes to impose in the light of its own stage of development and its own cultural and social objectives. So long as these safeguards are provided, there is no reason why the developing countries should not increasingly specialize in certain industrial fields, both for home market production and export purposes, which are going to become more costly for the developed world because of their growing concern with environmental standards”. *Ibid.*, pp. 35-36. The Founex Report was incorporated into the Report by the Secretary-General under the same heading (Subject Area V): UN Doc. A/CONF. 48/10, Dec. 22, 1971, Annex I, at pp. 32-33. See also Knödgen, “Umweltzerstörung als Entwicklungsstimulus”, in: *Entwicklungspolitik im Umbruch* (Zürich, 1979), pp. 152-159.
7 "Industrial Pollution Control and International Trade", reproduced in *ibid.*, pp. 201-225.
9 UNIDO, ID/B/182/Add. 1, May 12, 1977, 15.
12 Some 7,682 companies were approached through questionnaires; 2,391 responded; 447 showed a positive attitude towards redeployment. Those seeking opportunities for markets in the developing countries or facing constraints on the home market saw redeployment to mean one or more of the following: (a) the establishment of subsidiaries in developing countries; (b) the sale of technology and know-how to developing countries; (c) the sale of equipment, including used equipment, to the developing countries; (d) the provision of management services to the developing countries; (e) the transfer of existing plants or units to the developing countries; (f) capital investment in the developing countries. ID/B/190, 4, 3.

13 ID/B/199, 11.

14 Section IV, paragraph 2.7 resolution 3362 (S-VII).


16 See A/10112, chapter IV.


19 A/32/16, paras. 167-173.


22 ID/B/199, 5.

23 ID/B/199, para. 35.

24 ID/B/222, paras. 1-14.

25 Ibid., 16-17.

26 See A/10112, June 13, 1975, 44-51.


28 UNCTAD/ST/MD/18, March 30, 1978, 7, 10, and 16.

29 See: A/10112, Table 6 at 9.


33 Malmgren, "Environmental Management and the International Economy", in: Kneese, Rolfe and Harned (eds.), Managing the Environment: International Economic Co-operation for Pollution Control (New York, 1971), p. 53. Malmgren discusses the problem "of potentially major international importance", i.e., the cost impact on industry arising from new environmental controls and pollution limits, and states that stiff controls will lead to increases in costs - affecting competition from imports suffering no such controls. National variations in inspection and testing, tax incentives, and freedom to choose the least expensive methods of production may lead to "building of plants abroad, thus in a sense exporting the pollution, but also exporting long-term capital and jobs" (55). Changes in cost structure or in product prices may drive MNCs to adopt...

36 One old sulphate mill, for example, may discharge organic matter in its effluents equivalent to that emanating from a city of two million people; the odour of an inefficient sulphate mill may be detectable at a distance of 50 kilometres; a stream receiving waste chemicals in an effluent used as irrigation water may have ruined land for agricultural use. Specific examples of pollution by the industry are numerous. See Sikes, “A Perspective on the Environmental Protection Situation in the Pulp and Paper Industry”, in: United Nations Environment Programme, Industry Sector Seminars, Pulp and Paper Meeting (Paris, March 19-20, 1975), Papers and Documents, 13.2.

37 See Ruckelshaus, “Introductory Paper”, in: United Nations Environment Programme, Industry Sector Seminars, Aluminium Meeting (Paris, Oct. 6-8, 1975), Papers and Documents, 6, 16-17. The costs of pollution control vary considerably between plants depending on different processes, age of plant, locations, regulations, etc. Requirement to upgrade pollution control equipment at existing plants and especially plants with no controls can give rise to a significant economic impact on an individual plant. However, one case is likely to differ from another. Based on model calculations, it can be estimated that the installed costs of air pollution control at new primary aluminium smelting plant range from 5 to 10 per cent of the local costs of the plants; operating costs vary from 1 to 5 per cent of the sales price of aluminium. See Nestaas, “A Survey of Pollution Problems in the Aluminium Industry”, ibid., 12-14.

38 See, UNEP Industry Sector Seminars, Motor Vehicle Seminar (Paris, Oct. 4-6, 1976), Papers and Documents.
39 Ibid., 68.
41 Ibid., 5.
44 See A/10112 (ID/CONF.3/31, June 13, 1975), 49.
46 See Knödgen, loc. cit. n. 4, at p. 159.
48 See, A/CONF. 48/14/Rev. 1.5.
49 Ibid., 26.
The Creation of Transnational Rules for Environmental Protection
by Peter H. Sand

Contents
I. Transnational Environmental Standard-setting ("Eco-standards")
II. Transnational Environmental Licensing ("Eco-permits")
III. Transnational Environmental Auditing ("Eco-audits")
IV. Conclusions

The evolution of international environmental law is most often described by reference to the development of formal treaty law, and, less often, to the development of international resolutions and other declaratory or programmatic documents characterized as "soft law". Limitation to these sources tends to neglect a rapidly expanding third dimension of international regulatory measures which operate below the level of visibility of "classical" public international law, perhaps because of their predominantly technical nature. Although they are derived in part from existing international treaties or from the more or less implied attributes of existing intergovernmental organizations, the regulatory practices so developed are frequently hybrids. They relate to both the international and the national legal order; to public (inter-State) relations as well as to those characteristic of private international law and procedure, or involving non-governmental participants and institutions; and they involve a wide range of legal or para-legal instruments relating to governmental regulation of international economic activities. While most of these rules would fall into the category of "international administrative law", they are perhaps best described as "transnational". For the purposes of the present analysis, three typical techniques of transnational environmental law-making will be selected: standard-setting, licensing and auditing. It will be shown that these techniques are well-established and interdependent.
I. Transnational Environmental Standard-setting ("Eco-standards")

The setting of technical standards has long been an attribute of international organizations, from the 19th century European river navigation commissions to contemporary specialized agencies of the United Nations and a variety of other global and regional bodies. Not surprisingly, therefore, a wide range of environmentally relevant matters are today already regulated by transnational standards, e.g.:

- the WHO international standards for drinking water;
- the international food quality standards of the FAO/WHO Codex Alimentarius;
- marine resource conservation regulations by the International Whaling Commission and several regional fisheries commissions;
- radiation protection standards by IAEA and EURATOM;
- aircraft noise standards by ICAO;
- standards for the transportation of dangerous goods by road, rail, ship and air, adopted by a number of intergovernmental bodies and non-governmental associations such as IATA.

This list could easily be expanded. In an earlier study, the term “international eco-standards” was proposed for this phenomenon to cover any one of the following varieties:

(a) minimum quality standards or maximum tolerable contamination levels (threshold, safety standards) for specific environmental resources such as air and water, and for specific consumption resources such as food products and feedstuffs;

(b) minimum quantity standards for non-renewable (stock) resources and for those renewable (flow) resources which have a "critical zone" below which depletion becomes irreversible;

(c) maximum permissible standards of waste emission (qualitative and quantitative tolerance limits) for specific sources of environmental pollution; and

(d) minimum quality standards for specific industrial and chemical products which create potential environmental risks including non-degradable residues (such as pesticides, herbicides, fertilizers, fuels, detergents).

A common feature of most of these standards is that they are rarely incorporated in the basic text of an international treaty but appear instead as "technical annexes" subject to a simplified procedure of adoption and amendment in response to scientific and technological changes. This convenient method of by-passing the traditional (and cumbersome) form of treaty amendment goes back to one of the oldest international technical organizations, viz. the 1875 St. Petersburg "regulations" of the International Telecommunications Union. Although this technique has become universally accepted in practice during the past century, it is poorly reflected in the theory of international law. Yet today the routine elaboration, drafting and revision of most transnational environmental standards take place in technical expert groups which meet peri-
odically in standing “advisory” committees rather than in ad hoc diplomatic conferences.

In view of the diversity of the subjects and competences involved, depending on a variety of different constitutional instruments and quasi-legislative powers, the actual legal status of these standards takes various different forms. As regards their binding effect on participating States, they may conveniently be divided into three categories: strictly mandatory standards (e.g., the radioactive contamination standards under the 1957 EURATOM Treaty); non-mandatory standards (e.g., the 1969 FAO/WHO Guidelines for Legislation concerning the registration for sale and marketing of pesticides); and potentially mandatory standards which allow dissenting States to “opt out” by means of a special notification procedure (this is the method most frequently used in contemporary international practice: e.g., under the 1969 Convention on the Conservation of the Living Resources of the South-East Atlantic). The transition from one category to another is often difficult to determine and even “voluntary” acceptance of standards can be worked into a system with well-defined uniform legal consequences, as is demonstrated by the international food standards of the Codex Alimentarius drawn up jointly by FAO and WHO. Moreover, the mere adoption of standards by a qualified international expert body tends to give them “model” status for national law-making, particularly when they deal with new environmental subject matters on which there are few national precedents as yet available, or where such standards might be relied upon in connection with the settlement of disputes.

II. Transnational Environmental Licensing (“Eco-permits”)

A comparison of examples of national legislation shows that most countries today identify certain economic activities as posing “ecological risks” and therefore subject them to special licensing procedures - from the discharge permits under the 1899 U.S. Refuse Act to the concept of the établissements classes in French administrative law or contemporary Scandinavian legislation on miljöfarlig verksamheter. While many such activities have potentially international effects, and attempts have been made on a regional level to ensure transfrontier cooperation on the issuing of licences, it seems unlikely that governments will abandon their national economic licensing powers to any supranational permit office at this stage. Instead, the tendency has been to reach agreement on the mutual intergovernmental recognition of authentic national permits provided certain common standards for the granting of these permits are observed.

This international regulatory system therefore delegates all licensing functions to designated national authorities. Uniform sanitary and vaccination certificates are issued by national medical and veterinary services under the WHO International Health Regulations, as are phytosanitary certificates for exports and re-exports under the 1951 International Plant Protection Convention. Conformity with uniform aircraft noise control specifications is certified by national authorities under Annex 16 of the 1944 Chicago Convention on International Civil Aviation, and “international oil pollution prevention certificates” for ships are
issued by national authorities pursuant to the 1973 IMCO Convention for the Prevention of Pollution from Ships.

Further examples are provided by the waste disposal permits for certain maritime areas and international inland waters, issued and mutually recognized pursuant to the 1972 London Convention on the Prevention of Waste and Other Matter, the 1972 Oslo Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft, the 1976 Barcelona Protocol for the Prevention of Pollution of the Mediterranean Sea by Dumping From Ships and Aircraft, the 1976 Bonn Convention for the Protection of the Rhine against Chemical Pollution, and EEC Directive No. 76/464 on pollution caused by certain dangerous substances discharged into the aquatic environment of the Community. As far as the disposal of potentially polluting substances listed on the so-called "grey lists" annexed to all these agreements (as distinct from the "black lists" of totally prohibited substances) is concerned, authorizations must be obtained from the competent national authorities in accordance with specified common criteria.

Similarly, the 1973 Washington Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) provides for the granting and mutual recognition of national permits and certificates covering the export, import and re-export of plant and animal species listed in the appendices to the Convention. While a degree of uniformity is ensured by a "Technical Expert Committee on the Harmonization of Permit Forms and Procedures", the basic principle remains one of national licensing for transnational purposes.

This principle has, of course, numerous historical antecedents in international relations - from the seaworthiness and airworthiness certificates for ships and aircraft to the registration of objects launched into outer space; and from international driving licences to the mutual recognition of academic degrees. It is likely that the same principle will be applied in the future international regulation of a variety of other matters, such as air pollution controls or industrial product safety. The incentive for governments to participate in any such system (and the principal sanction of that system) is its reciprocity and the practical economic advantage which it offers to the participating State, e.g., where compliance facilitates international communications or the export of certain products.

### III. Transnational Environmental Auditing ("Eco-audits")

No system of "eco-standards" and "eco-permits" would be complete without appropriate machinery to control compliance. Adherence by national licensing authorities to standards requires continuous monitoring and comparative evaluation. At the same time, the past performance of each participating State usually provides the basis for future modifications to the system. Periodic review, e.g., by way of annual reports, thus becomes a necessity. While ex post facto review cannot prevent an actual breach of common standards, it tends to have an important deterrent effect in preventing recurrence of a breach, much in the same way as an auditing of accounts has. It would seem appropriate, therefore, to label this mechanism "eco-audit".
One of the best-known examples of this is the annual review by the International Whaling Commission of catch quotas, which is based on statistical reports by all member governments on their past catch figures, authorized permits, monitoring results, etc. Together with the annual reports on infractions, the material so provided has tended to influence decisions on quotas and the future protection status of whale stocks. While this auditing mechanism cannot of itself ensure improved compliance, it has certainly contributed to more informed, if not always more rational, decision-making.

The Endangered Species Convention (CITES) provides for periodic reports by each Party on the permits granted by national authorities each year and on enforcement measures taken. On the basis of a comparative analysis of these reports and of related supplementary information, an analysis prepared by the Secretariat, the Conference of the Parties then undertakes its biennial review of implementation which also tends to have an important influence on future action: e.g., an increase in recorded exemptions for hunting trophies and for "captive-bred" specimens led to a tightening-up in the definition of such trophies and of breeding in captivity in 1979. This underlines the function of auditing machinery as built-in compliance controls.

Among the numerous historical examples for such auditing, a particularly significant one is the annual examination of national reports concerning the implementation of international labour conventions, which has been carried out for the past 60 years within the framework of ILO and which in recent years has become increasingly important in the field of the working environment. The ILO analogy is significant here because it demonstrates the effectiveness of non-government bodies participating in the review. In the same way as employers' and workers' organizations have contributed to the international supervision of labour standards, both the IWC and the CITES auditing processes similarly involve a continuous dialogue (sometimes escalating to confrontation) between representatives from industry on the one hand and environmental conservationists on the other. Dual scrutiny by the non-governmental groups directly concerned undoubtedly ensures a more critical evaluation of governmental reports and hence improves the thoroughness of the audit.

IV. Conclusions

The foregoing analysis is based on a comparison of various existing rules and institutions relating to transnational regulation of environmental matters. While details are bound to differ from case to case, a basic uniform pattern is evident which may be reduced to an over-simplified prototype (or Idealtyp, in Max Weber's terms) along the following lines:

1. Environmental standards ("eco-standards") are adopted by an international expert body designated for this purpose by governments and are recognized as technically binding. Standard-setting follows a simplified procedure not requiring formal ratification although it usually allows dissenting governments to opt out within specified time limits.
2. Licences ("eco-permits") for economic activities considered to be potentially harmful to the environment are granted by designated national authorities and are mutually recognized by all participating governments. The licensing process is based on conformity with the accepted transnational eco-standards and on the observance of agreed criteria to ensure a certain degree of procedural uniformity.

3. Periodic reviews ("eco-audits") of actual compliance by governments with these environmental standards and licensing criteria are carried out on the basis of national reports. Auditing may involve participation by non-governmental interest groups to ensure critical feedback.

Perhaps the most characteristic feature of the three-tier system described above is that it does not rely on classical forms of international law and organization but on the principle of mutual recognition of national technical regulation. Implementation is thus delegated to a network of national administrative authorities, with a minimum of international coordination (i.e., a secretariat acting mostly as a "switchboard" to facilitate direct network communications). The result is a kind of dédoublement fonctionnel for national agencies which act at the same time as integral parts of a non-hierarchic international machinery. (The situation is further complicated by the fact that the transnational functions described are not necessarily carried out by a single agency but may be shared at the national level by different implementing authorities and possibly by non-governmental bodies.)

On the other hand, the three basic components of the system (standards - permits - audits) are in practice interdependent. This is partly because the entire system of regulation is only acceptable to governments as a package; given the economic consequences of environmental controls, States would be reluctant to accept them unilaterally unless there were certain guarantees that other participating States (i.e., economic competitors on the international market) would accept them too. Only a combination of the three above-mentioned components offers sufficient guarantees of verifiable reciprocity.

The surprising success of this unorthodox form of transnational technical regulation in a number of environmental areas may be explained in terms of two distinct factors: firstly, environmental management by definition deals with constantly changing situations (including crises) and therefore requires more flexible techniques of law-making than the slow and cumbersome process of classical treaty law can provide. Secondly, in spite of the growing awareness of the multiple transnational environmental effects which may ensue from action at the national level, governments are not prepared to enter into formal international agreements on matters considered to be part of their domestic jurisdiction. Regulatory systems of the kind described here appear to offer an attractive way out of this dilemma by facilitating joint technical action through "concerted unilateralism" without detracting from national environmental sovereignty.
Footnotes


2 The first comprehensive treatment of environmental legal problems in a transnational context is found in Karl Neumeyer's monumental Internationales Verwaltungsrecht, 5 Vols. (1910-1936); see also Neumeyer, "Le droit administratif international", 18 Revue Générale de Droit International Public (1911), 492.


7 The "opt-out" procedure has not been used as frequently as one might assume, and has in no reported case resulted in jeopardizing the global effectiveness of eco-standards. However, recent developments, including 1979 objections by the USSR and Spain in the International Whaling Commission, indicate a different trend. Under the "opt-out" provisions of the 1973 Endangered Species Convention (note 18, infra), for the first time in 1979 a "cartel" of 4 importing countries entered reservations on an endangered crocodile species for which their leather industries control the world market (France, the Federal Republic of Germany, Italy, and Switzerland), thereby invalidating the world-wide trade ban imposed by the Conference of the Parties for the protection of this species (Crocodylus porosus, the saltwater crocodile).


9 It was not until 1970 that the potential of this 1899 law as an administrative tool was "re-discovered" and a federal permit programme established; see U.S. Council on Environmental Quality, Fourth Annual Report (1973), pp. 174-175.


12 E.g., under the Nordic Environmental Protection Convention adopted by Denmark, Finland, Norway and Sweden on Feb. 19, 1974.


16 Appendix II (Form of Certificate), 13 International Legal Materials 1974, 605.


18 12 International Legal Materials 1973, 1085; see Appendix IV for model export permit.

21 CITES, Second Meeting of the Conference of the Parties (San Jose, Costa Rica, 1979), Resolutions Conf. 2.11 and Conf. 2.12.
24 E.g., ILO Convention No. 148 concerning the protection of workers against occupational hazards in the working environment due to air pollution, noise and vibration (1977); and the related ILO Standards pursuant to Recommendation No. 156 (1979).
26 For a discussion of these links in the ILO context, see Landy, op. cit., n. 23, pp. 4-6, 203-204, 210-211; and see generally Haas, Beyond the Nation-State: Functionalism and International Organization (1964).
28 The political pitfalls of international negotiations in the area of States' "sovereign right to exploit their own resources pursuant to their own environmental policies" (Principle 21 of the 1972 U.N. Stockholm Declaration on the Human Environment) were illustrated by the failure to reach agreement on the proposed UNEP principles on shared natural resources; see U.N. General Assembly Resolution 33/87 (1978), and generally Barberis, Los recursos naturales compartidos entre estados y el derecho internacional (1979).
The International Concern for the Environment: The Concept of Common Heritage

by Carl August Fleischer

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The term "common heritage of mankind" has followed the work of the United Nations Third Law of the Sea Conference, and the work leading up to that Conference, ever since the Maltese proposal was presented to the U.N. General Assembly in 1967. In that proposal it was stated that the sea-bed and ocean floor beyond the limits of present national jurisdiction should be declared "a
common heritage of mankind", and that a treaty should be drafted, involving certain principles regarding the use of that same sea-bed and ocean floor. It was further stated, inter alia:

"It is, therefore, considered that the time has come to declare the sea-bed and the ocean floor a common heritage of mankind and that immediate steps should be taken to draft a treaty embodying, inter alia, the following principles:

(a) The sea-bed and the ocean floor, underlying the seas beyond the limits of present national jurisdiction, are not subject to national appropriation in any manner whatsoever;

(b) The exploration of the sea-bed and of the ocean floor, underlying the seas beyond the limits of present national jurisdiction, shall be undertaken in a manner consistent with the Principles and Purposes of the Charter of the United Nations;

(c) The use of the sea-bed and of the ocean floor, underlying the seas beyond the limits of present national jurisdiction, and their economic exploitation shall be undertaken with the aim of safeguarding the interests of mankind. The net financial benefits derived from the use and exploitation of the sea-bed and of the ocean floor shall be used primarily to promote the development of poor countries;

(d) The sea-bed and the ocean floor, underlying the seas beyond the limits of present national jurisdiction, shall be reserved exclusively for peaceful purposes in perpetuity."

These were, as we know, the origins of the U.N. "Sea-bed Committee", the U.N. Ad Hoc Committee established to study the peaceful uses of the sea-bed and the ocean floor beyond the limits of national jurisdiction. The Committee, which was set up by the General Assembly on 18 December 1967, had at that time its terms of reference restricted to this one matter and did not then consider other issues concerning the law of the sea. It was, in other words, a Committee for the "common heritage" of the international sea-bed area - with the task of considering, inter alia, "practical means to promote international cooperation in the exploration, conservation and use" of this area. There was, however, as yet no decision as to the effect that the "common heritage" concept should indeed be applied.

In 1970 the mandate of the Sea-bed Committee was extended to include additional questions relating to the law of the sea and not just the use of the sea-bed beyond the limits of national jurisdiction (or, to put it differently, the ocean floor beyond the existing limits of the continental shelf). This was decided by the General Assembly on 17 December 1970 with a view to the convening of the future Third Law of the Sea Conference.

Obviously, the Maltese proposal and the idea of a "common heritage" cannot alone be regarded as the main background to, or catalyst for, the entire U.N. Law of the Sea Conference (UNCLOS). They are only one part of the whole
It goes without saying that this widening of scope of the Committee's activities to cover deliberations on the entire law of the sea (or, at any rate, the ad hoc exploration of all issues which might justifiably or not be considered to be unsettled) meant a somewhat different setting for the consideration of an international seabed area and the "common heritage". It was no longer the sole or paramount problem in focus, but had become part of a package. Not only the two superpowers but the majority of States had other interests to consider too, which might easily be given priority in their national decisions on the policy which they should follow. A large number of coastal States saw the UNCLOS as a means to establish or to reinforce their claims to extended jurisdiction on fisheries, a goal which might be regarded as more imminent and of vastly greater importance than the possible future shares in possible future profits which might be obtained by an international enterprise in its attempts to recover manganese nodules from the deeper parts of the ocean.

The fact that the nodules and the "common heritage" were now reduced to being just one part of the package, and combined with the general UNCLOS policy of reaching a comprehensive solution to all outstanding issues in one single LOS Treaty, might in principle have worked both ways. It might, of course, have made agreement more difficult; since the fate of the "common heritage" was now linked to the possibilities of agreement on, inter alia, a compromise on transit passage through straits, acceptable to shipping States as well as to "straits States" like Spain, Morocco or Indonesia. On the other hand, it might also have made agreement on the "common heritage" concept easier, as this might have been regarded as a prerequisite for agreement on the extension of fishery jurisdiction to 200 miles. The desire of coastal States to obtain a firm legal basis for such extensions could easily facilitate consensus on other issues, such as the "common heritage".

One of several considerations involved here is the time factor. As is well known, the UNCLOS was overtaken by events. A speedy solution to the main elements of the package, e.g., at the 1974 Caracas session, might in theory at least have led to a generally acceptable compromise. But the continuation of the Conference through a number of sessions and for a number of years, with no apparent
certainty of success at the next turn, could not in the long run contain the urge towards unilateral extensions. This was particularly the case since the Conference itself acted as a sort of catalyst by holding out the 200 mile economic zone as that system of coastal jurisdiction which was about to receive general acceptance.

Some may argue that by the exercise of this very function the UNCLOS virtually committed suicide. For, when coastal States started to convert the Conference ideas on the 20 mile zone into general customary law, which the zone has now become (at least in the view of the present writer and of those States which have extended their limit to this distance), there was no longer the same need to arrive at a LOS Treaty establishing the necessary legal authority. This incentive was lost, with repercussions for the international sea-bed area also.

This does not imply that the UNCLOS has been a failure. The Conference has been of the utmost importance in allowing States to discuss ideas and in channeling the question of coastal States jurisdiction in such directions as might have the best chances of receiving international acceptance. The UNCLOS has been the workshop for the development of the new 200 mile zone, with its vast implications for the future protection and use of the world's natural resources.

But it may well be that further deliberations will turn out to be what some writers have termed "a shadow of unilateral actions".

It is elementary that the international regulation of a "common heritage" such as that of the sea-bed area beyond the outer limits of the continental shelf can never be achieved by an idealistic or pure consideration of the interests of mankind as a whole, nor, on the other hand, by a purely "objective" evaluation of the interests involved, whatever "objective" may mean. National interests, negotiations between different delegations and compromises will all have to play a part, not only in the multilateral system of the "United" Nations but also at the bilateral level. However, what is even more important here is that the regulation of the international sea-bed area has been linked to interests which do not per se concern this area, but which have great impacts of their own on the positions taken and on the willingness to compromise, also with regard to the "common heritage". Moreover, the time factor and the developments in State practice taking place outside the Conference have a direct bearing on the chances of agreement being reached on the "common heritage" and on other items on the agenda. Positions taken must be viewed with this overall picture in mind.

II. The Term and the Concept

In rational legal thinking the term should be regarded as subordinate to the concept. A term is only a tool to express a certain thought. But this is not always the case in actual practice. The term may in fact be the starting point, while the meaning may develop and be connected to the term. Or, at any rate, someone may start using the term with more or less vague notions as to what it is to convey and those notions will be supplemented and even changed by subsequent usage.

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This, indeed, is what has happened during the evolution of the UNCLOS with regard to the term consensus. In itself this term conveys the very simple meaning of "consent" or "agreement". During years of debate at the UNCLOS and in the U.N., it has become "the principle of consensus", giving rise to intricate considerations and weighty declarations as to whether a certain procedure is or is not consistent with the so-called "principle of consensus".

A similar mystique may appear to have surrounded the term "common heritage of mankind".

It may be a mistranslation when the Bible says in St. John 1:1 that "the Word" (as opposed to the "idea" or "concept") was "in the beginning". But it is often true for certain terms which may more or less live lives of their own and gradually acquire their meaning as time goes on. One may venture to suggest that the original proposal on the "common heritage" did not convey any precise meaning as to what this term should imply. Was it meant to be a justification of the proposal and of a certain system of exploitation, as a political or de lege ferenda argument, or the expression of already existing international law? Was it something more than, or different from, the system of exploitation proposed at the same time, or was it merely a repetition of that system in somewhat more poetic and rather less clear terms?

Or was it possibly simply a statement to the effect that the resources of the international seabed area belong to no single State and, therefore, fall under the ownership of the entire international community? In the latter case the term "common heritage" seems to mark the reappearance of the idea of res communis, a term known to the international lawyer not for decades but for centuries.

The ancient dispute as to whether the high seas should be regarded as res communis - something belonging to all nations in common - was finally brought to an end by Article 2 of the 1958 Geneva Convention. According to this Article the high seas are "open to all nations". But there is no right of national appropriation, as has been the case with regard to a terra nullius. And rights must be exercised "with reasonable regard to the interests of other States in their exercise of the freedom of the high seas".

It may well be that the term "common heritage" expressed no more than the idea that the high seas were open to all nations in accordance with Article 2 quoted above; the term therefore being only a restatement, in different words, of the traditional concept of res communis. But by coining the phrase "common heritage" one managed to convey the impression that this was a new invention, perhaps meriting new study by lawyers and diplomats, and even by those familiar with the res communis concept and the prevailing rules of international law.

Now, the entire Maltese proposal of 1967 obviously differed markedly from the traditional rules concerning the high seas. It suggested a common or international exploitation and profit-sharing as opposed to the free exercise of rights by each individual nation. But it is submitted that this has nothing to do with the ideas of "common", "common ownership" or "common heritage" as such.
When a piece of property is subject to common ownership (be it a "heritage" or not), this does not of itself predetermine the system of exploitation. Different systems may be envisaged. The law may provide, or the co-owners may so agree, that the "common ownership" shall be exercised in practice only by a system of common exploitation. Or one may have chosen a system of access and exploitation to be exercised individually by each individual participant provided only that he has due regard to the rights of the other parties. This is indeed what is set out in the second paragraph of Article 2 in the Geneva Convention on the High Seas.

The choice of system depends on practical considerations. In some instances it may seem advisable to leave the exploitation to common organs and to deny individual access for each co-owner, in order to avoid a situation in which the "stronger" and more "greedy" among the co-owners can take the lion's share and leave their partners to pick up the remnants. This does not relate to the "common ownership" as such but rather to the measures necessary in the concrete situation to protect the rights of each individual participant.

Thus, one may well suggest that the Maltese proposal, rather than invoking the seemingly new idea of a "common heritage of mankind" (of whom else?), might perhaps have made a less poetic reference to existing rules of international law, in particular to the Geneva Convention and its Article 2, paragraphs 1 and 2. It might then have been pointed out that the implementation of this principle of res communis necessitated special measures, to avoid a state of affairs being reached where the most valuable resource areas would in fact be exploited by certain States which were economically and technologically the most advanced in the field. In order to secure the rights of other States and to avoid a de facto appropriation of the areas by individual States and companies, an international system of exploitation could then have been suggested on the basis of existing general principles of law. That a State cannot validly subject any part of the high seas to its sovereignty is already set out in Article 2 of the Geneva Convention.

Such an approach would have made it clear that the problem to be solved was that of the system of exploitation to be adopted and not the question of ownership as such. However, it may be that the use of a new phrase (instead of the traditional res communis terminology) served to focus attention on the proposal as well as on the future work of the Sea-bed Committee. Even if it was to some extent based on a misconception, the idea conveyed was that there was involved a new fundamental principle of international law, unlike the tedious task of drafting rules and regulations for yet another international organization, and that at last the U.N. machinery was proving itself able to produce something new.

From this point of view one may say that the "common heritage" idea may indeed have served a useful purpose: to attract attention and interest, and to get the work started as a matter of priority.

What has been said up until now relates to the beginning. Since then, the "common heritage" has been the subject of endless discussions. It has become part of General Assembly Resolution 2748 (XXV), Declaration of Principles Governing the Sea-bed and the Ocean Floor, and the Subsoil Thereof, beyond
the Limits of National Jurisdiction, and is to be found in Article 136 of the Informal Composite Negotiating Text (ICNT) of the U.N. Law of the Sea Conference.

III. The Concept of "Common Heritage" as Understood by the U.N. Sea-bed Committee in 1969

In its report presented to the General Assembly in 1969, the Sea-bed Committee explained its adoption of the "common heritage" concept in the following way:

"According to many delegations both the concepts of *res nullius* and *res communis* were of little practical value for the determination of the legal status of the area of the sea-bed and ocean floor beyond the limits of national jurisdiction. It was also pointed out that the occupation and national lake theories were legally untenable and politically unacceptable.

It was suggested that the notion of the "common heritage of mankind" would provide the basis for specific principles concerning the area; accordingly all the rules and principles for activities in the sea-bed should be based on that notion. Its elements and consequences were: the notion of trust and trustees; indivisibility of the heritage; the regulation of the use of that heritage by the international community; the most appropriate equitable application of benefits obtained from the exploration, use and exploitation of this area to the developing countries; freedom of access and use by all States; and the principle of peaceful use.

The same view held that the concept of "common heritage of mankind" implies an international machinery for the regulation and management of the sea-bed and ocean floor beyond the limits of national jurisdiction on behalf of the international community. A suggestion was put forward that, for purposes of exploration and exploitation, the area of the sea-bed and ocean floor beyond national jurisdiction be deemed to have been vested in the United Nations for the benefit of mankind as a whole.

Certain delegations expressed the view that the new legal order should be governed by the "good of mankind" or "the common interest of mankind", these phrases being preferred to the word "heritage" which might give rise to difficulties in the formulation of legal norms.

On the other hand, some delegations stated that the concept of "common heritage of mankind" was contrary to existing norms and principles of international law. It was also stated that it was devoid of legal content and that its discussion was not practically useful. Another view was that it was also open to various interpretations and that it could not be understood until its implications were spelled out. But it was also pointed out that, before their adoption, all legal concepts are devoid of legal content and that therefore that argument was irrelevant."

Here, the "common heritage" notion is obviously taken as being distinct from the notion of *res communis*. It also encompasses the ideas of an international
system of exploitation and the distribution of benefits through an international authority.

One is, of course, free to define a new term in such a manner as is found most convenient. And one may, therefore, accept that the "common heritage of mankind", as defined by the Sea-bed Committee, is a term which refers to a certain system of exploitation, in particular an exploitation undertaken by international organs instead of by individual States or companies. But it may be suggested that none of the particular ideas which the Sea-bed Committee thus chose to put into the term are inherent as such in the original and ordinary meaning of the words used: "common", "heritage", "mankind". In view of the fact that the principles and rules concerning exploitation, distribution of profits etc. would in any case have to be set out individually, expressis verbis and in separate articles, one may indeed wonder whether the statement on the "common heritage of mankind" does add in any way to the legal content or even to the intellectual meaning of a document such as the 1970 U.N. Declaration which reiterated the phrase "common heritage", and which was built on the findings of the Sea-bed Committee.

Obviously, the idea of a "common heritage" cannot in itself fill the need for a political or de lege ferenda or even de lege lata reason for an international system of exploitation. When "common heritage" has been defined as a thing or an area which should be subject to exploitation by an international authority, it cannot at the same time be invoked as the premise for that conclusion.

IV. The Informal Composite Negotiating Text (ICNT) of 1977

The so-called "Area", i.e. the international sea-bed area and its subsoil, beyond the limits of national jurisdiction, occupies one Part of the ICNT (Part XI).

As is well known, this Composite Text represents an important step forward in the work of the UNCLOS but one is still some distance from the aim of an international convention.

In the ICNT the solemn principle from the Maltese proposal, the Sea-bed Committee and the 1970 Declaration of the General Assembly, is repeated in Article 136:

"The Area and its resources are the common heritage of mankind."

This must be read together with the definition of the "Area" in Article 1, para. 1 (1):

"Area" means the sea-bed and ocean floor and subsoil thereof beyond the limits of national jurisdiction."

The French text of Article 136 reads as follows:

"La Zone et ses ressources sont le patrimoine commun de l'humanité."
This does not, however, mean that the ICNT sets out any general rule on "common heritage" in the specific meaning advocated in the Sea-bed Committee; namely, that all exploitation should be carried out by an international organ. What appears from the ICNT is a compromise, whereby some areas will be subject to exploitation by individual states or companies, while other areas will be reserved for exploitation by the international Authority or Enterprise. The solution proposed is found in ICNT Articles 133 to 192 and Annex II.

To understand the need for such a compromise - the so-called "parallel system" - one must take account of the following:

In general, the work of the UNCLOS has been removed from those patterns of conflict which are otherwise to be found in the intercourse between states at most levels, in particular within the United Nations. In most instances the positions taken at the Conference may be explained with reference to the maritime interests and the geographical position of states, not by their being member of the eastern or the western block, or by their different stages of industrial development. The differences in interests between coastal and non-coastal States, between States with extensive shipping interests and those which do not have such interests, etc., seem to play a far larger role in most issues than the interests of developed versus developing nations.

However, the First Committee, which is competent in matters regarding the "Area", stands out as an important exception to this. In this Committee it is not maritime interests in particular which are at the forefront of the debate but rather the general differences in interests between developing countries and those countries possessing the most advanced technological and economic means to exploit the riches of the deep sea-bed. In the First Committee the fundamental economical and ideological differences concerning the distribution of wealth and resources in today's world and in the future are at the very surface. Even if it were an oversimplification to say that these latter differences of interest are of no significance whatever in the other Committees, it may fairly be said that it is only within the First Committee that one has felt the full impact of the fact that this is a Conference related to the distribution of resources and one under the auspices of the United Nations. Two fundamentally different standpoints are in conflict here, both of which may be supported by important legal and political considerations.

On the one hand, it has been argued that according to traditional international law the sea-bed beyond the limits of national jurisdiction is still a part of the high seas. This leads to the conclusion that any State with the necessary technology may permit its nationals to exploit the resources available, just as every State has the right to allow its nationals to fish on the high seas. The practical result of this view will be that a few industrialized nations, with the most advanced technology and also capable of financing the large investments called for, will be able, on the basis of their own unilateral legislation, to start deep sea-bed mining, in particular for manganese nodules.

On the other hand, it is argued that the resources of the deep sea-bed are "the common heritage of mankind", on the basis of the meaning put forward by the
Sea-bed Committee. The resources should be subject to development and exploitation for the common benefit of all, but in particular for the benefit of the developing nations. The exploitation should take place without an advantage being given to those States which at the moment possess the most advanced technology; if those States were to be given an advantage because of their own technical advancement, it would imply a sort of neo-colonisation. The present inequality in the distribution of wealth and resources would be increased and made to apply even to this as yet unexploited area.

It has been obvious from the beginning of the UNCLOS negotiations that it is not possible to find a formula which reconciles both these diametrically opposed views. The only way to attain the aim of a regime governed by a convention, as opposed to one of conflict and a "free for all" which would result if it were left to traditional principles of the freedom of the high seas, is to formulate a solution which lies "in-between" the positions of principle, a compromise. Such a compromise is envisaged by the parallel system.

At the same time, it may be argued that any such compromise would entail a curtailment of the principle of the "common heritage of mankind", as it would mean that a certain area of the deep sea-bed would be taken away from the system of purely international exploitation and would be allowed to be exploited by certain industrialized States for their own benefit or by companies licensed by such States. However, this is a necessary prerequisite for a solution which might also be accepted by all industrialized States and which would give the expected return on capital already invested in deep sea mining.

Whether the UNCLOS will reach its ultimate goal, in the form of a comprehensive LOS Convention, and at what stage this may be achieved, whether by consensus or by the requirement of a two-thirds majority, is still uncertain. Although the new rules on coastal State jurisdiction in the 200 mile zone have established themselves in State practice supported by the views put forward at the Conference, it seems doubtful whether a similar development can be envisaged for an international system of resource management for the sea-bed area beyond the limits of national jurisdiction. The "common heritage of mankind" as understood by the Sea-bed Committee may therefore never reach the stage of becoming actual law.

V. Further Analysis of the Concept of the "Common Heritage of Mankind"

The important part of the expression "common heritage of mankind" is the word "common". "Common" is linked to the words "of mankind". It is a question of resources belonging to the world in its entirety, resources which should not be appropriated or used for the exclusive benefit of one single State or company.

Indeed, "common" may be regarded as the only operative part of the phrase. It conveys the same meaning as "shared" resources. There seems to be no relevant distinction to be made between "heritage" as used in the "common heritage" formula and "resources" as applied in the context of shared resources.
But, one can argue that the use of the word "common", either alone or in combination with more current expressions such as "ownership" etc. might have been regarded as too "common" to attract attention. Such expressions might not have had the same appeal emotionally and politically and might not have given the same impetus to the work of the U.N. bodies.

"Heritage" does not only mean "resources" or "natural resources". However, it is obvious that the intended meaning has always been one limited to what is naturally present on the sea-bed and in the subsoil, as opposed to other assets and particularly to man-made structures.

"Heritage" further connotes the notion both of a certain fortune and an idea as to how such a fortune has been acquired. Literally, the common "heritage" means that the present generations of mankind have received the resources as some kind of legacy - an inheritance. This seems to imply that the resources of the seabed derive from what has been collected or procured by earlier generations, or from some other kind of predecessor.

If possible interpretations at a certain religious level (which clearly could not be very "common" to the U.N. family) are discounted, it might here be suggested that the word "heritage" is not entirely apposite. The resources of the sea-bed and the subsoil do not exist because of the travail of earlier generations or as a legacy left to mankind as a whole. It would be pure fiction to assert that the lack of technological development of earlier generations, which prevented them from harvesting the benefits of the deep ocean floor, is a form of legacy on their part to the world of today.

It may also be suggested that the word "heritage" puts the accent on the wrong thing as far as sound environmental and resource policy are concerned. From this viewpoint it is not important how the resources were acquired or whether earlier generations acted in a certain manner by not using what nature had provided. The focus of interests should be on the present and the future, not on the past. From an environmental point of view one must ask how the reserves can best be protected, preserved, developed and used for the benefit of present and future generations.

However, some merit may be found in the use of the word "heritage" inasmuch as it points to the fact that the resources present do not derive from the efforts or savings of existing generations, nor from any single State or group of States. The resources are not the result of their creative activities which could be said to entail a natural or inherent right to use and to consume, but a fortune to be preserved and used for the common benefit in a long-range perspective.

One might point out that according to the formula used it is the sea-bed and subsoil and not only their resources which are declared to be "the common heritage of mankind". But it is doubtful whether this distinction is significant here.

Of course, the reservation of the area "exclusively for peaceful purposes", as proposed by Malta and even as set out in the ICNT, goes beyond what can reasonably be read into the "common heritage" formula. It is difficult to see
that there can be any fundamental difference between the international sea-bed area and the superjacent waters. Both are traditionally subject to the régime of the high seas and are thereby res communis, but this has not prevented the extensive use of the sea for purposes of military navigation. It would be unrealistic to say that the idea of common ownership or heritage could by itself imply that military navigation would or should be prohibited according to international law. Even if the non-peaceful uses may be seen as having an element of exclusiveness in them (since a military operation or exercise will by its very nature be directed against some adversary, even if only a potential one, and, therefore, against one or more of the other "co-owners" of the "heritage"), it would be going too far to assert that a general prohibition can be deduced from the "common heritage" formula. What may be derived from that formula, however, is an obligation to refrain from those uses of the sea-bed - e.g. permanent military installations - which would prevent other States from having access to the area. But this relates to the element of exclusiveness, and not to whether the use is military or non-military. And it is doubtful whether such a conclusion goes beyond what follows from Article 2, paragraph 2 of the Geneva Convention on the High Seas, namely that a State which makes use of its rights over the high seas must take due account of the similar rights of other States.

In one sense it might be said that the ideas connected to the term "common heritage" were in fact contrary to the principle of a "common" heritage. One of the main aims was to deny or to restrict the access of certain States to the international sea-bed area. The area should not be open to all States in accordance with the traditional freedom of the high seas. Rather, as has been indicated, the underlying reason for an international machinery was to protect those States technologically less advanced in this field, States which would be at a disadvantage and not obtain their share of the resources involved if the traditional principles of the high seas were to apply. Therefore, the substitution of those principles by an international regime cannot be regarded as a departure from the concept of "common" ownership or "heritage", but rather as the reinforcement thereof.

VI. The "Common Heritage" and its Relationship to Environmental Law in General and to the General Principles of the Law of the Sea

Of greater importance is the fact that the introduction of the "common heritage" notion into sea-bed issues, and the further development of that idea, did not imply per se any international concern for the environment. The concept of the "common heritage" was not introduced with the primary object of protecting environmental values or to secure an environmentally sound policy. It seems that the idea of profit-sharing between nations was from the very beginning the more important aspect. And this tendency has been reinforced by the process of negotiation over the years that have passed since 1967.

Two precisions must be made here. Firstly, it may appear that the exploitation of the area by one single, competent international body may be more suited to the preservation and protection of resources and to achieving a general optimali-
zation of use in view of all the interests concerned, than would be the case in the traditional "free for all" where individual companies and States each pursue their own aim of maximum profit. Secondly, the element of environmental protection has also been taken into account to some extent in the discussions concerning how the "common heritage" is to be implemented in practice. In particular, reference may be made to principle No. 11 of the General Assembly's Declaration of Principles of 17 December 1979, according to which States shall cooperate to adopt and implement rules etc. for "the prevention of pollution and contamination, and other hazards to the marine environment, including the coastline, and of interference with the ecological balance of the marine environment". In addition, they shall cooperate for "the protection and conservation of the natural resources of the Area and the prevention of damage to the flora and fauna of the marine environment". Even if somewhat repetitious, this does not, however, seem to imply any addition to the obligations which might already appear to follow from general international law.

In the same connection one may mention Article 145 of the ICIMT:

"With respect to activities in the Area, necessary measures shall be taken in order to ensure effective protection for the marine environment from harmful effects which may arise from such activities in accordance with Part XII of the present Convention:

(a) The prevention of pollution and contamination, and other hazards to the marine environment, including the coastline, and of interference with the ecological balance of the marine environment, particular attention being paid to the need for protection from the consequences of such activities as drilling, dredging, excavation, disposal of waste, construction and operation or maintenance of installations, pipelines and other devices related to such activities;

(b) The protection and conservation of the natural resources of the Area and the prevention of damage to the flora and fauna of the marine environment."

The ICNT seems here - after several years of work in the Sea-bed Committee as well as at the UNCLOS - merely to reflect what was adopted as early as 1970. It is true that reference is made to ICNT, Part XII, which is the part dealing with the preservation of the marine environment in general. There, on "pollution from activities in the Area", one finds the following provision in Article 210, a provision which does not seem to indicate that any further penetrating studies have been undertaken with regard to environmental pollution as such, or that this has been a primary concern of the Conference:

"International rules, standards and recommended practices and procedures shall be established in accordance with the provisions of Part XI, to prevent, reduce and control pollution of the marine environment from activities relating to the exploration and exploitation of the Area. Such rules, standards and recommended practices and procedures shall be reexamined from time to time as necessary."
2. Subject to other relevant provisions of this Section, States shall establish national laws and regulations to prevent, reduce and control pollution of the marine environment from activities relating to the exploration and exploitation of the Area undertaken by vessels, installations, structures and other devices flying their flag or of their registry. The requirements of such laws and regulations shall be no less effective than the international rules, standards and procedures referred to in paragraph 1 of this article."

One may add that these UNCLOS texts should not be subject to any *a contrario* interpretation, e.g. with regard to the phrase that practices and procedures "shall be reexamined from time to time", which appears in Article 210.

It may be argued that none of these principles adopted on pollution from sea-bed activities is substantially different from, or supplementary to, what already follows from general principles of international law found in sources such as Articles 2, 24 and 25 of the High Seas Convention, the arbitral awards in the *Trill Smelter* case, the views of the International Court of Justice in the *Corfu Channel Case of 1949* etc. This does not mean that it may not be useful in 1977 to remind States, and the possible new international authority, of the obligations to prevent pollution of the seas. But, since one went no further than to repeat the general principles quoted above, the addition to international environmental law provided by the "common heritage" concept might be considered as a rather slim one.

What has been the centre of attention and has taken up the time of the deliberations, has been the organizational framework and the sharing of benefits. Over the years the discussions on the international sea-bed area have been increasingly concerned with the conflict of interests which exists between technologically advanced powers such as the U.S.A., the U.S.S.R., Japan and the European Communities on the one hand and the majority of the developing countries on the other hand. The first group stands to gain from a free system of exploitation by individual States or companies, while the latter expects a greater share if the exploitation of resources is channelled through an international system, where profits are divided according to the needs of individual countries rather than according to their technological know-how and the positions they would have occupied in a free-for-all for sea-bed resources. In addition, there is the important aspect of production control, a limitation on production in the international area, in order to protect the traditional producers of certain raw materials from the competition expected from the mining of manganese nodules. This may help certain States to maintain the prices of their export commodities and to stabilize their national income, but it can hardly be said to represent a concern for the environment.

The main efforts of the later sessions of the Law of the Sea Conference in particular have been directed at trying to find a compromise between the system of individual exploitation and profit-taking on the one hand and the purely international system on the other hand. Here is a situation of conflicting interests, bargaining and compromising with regard to participation in possible future profits, and one may say that such a situation is somewhat similar to the conflicts and the haggling which often accompany the sharing-out of an estate
between several claimants at the national level. This was, however, obviously not
the original intention of the "heritage" formula.

In the context of general environmental law - the international concern for the
environment - the "common heritage" as defined by the Sea-bed Committee
may be of little value. While there is merit in recognizing the environment in
general as belonging to the whole of mankind and resources as "common" or
"shared", one can obviously not advocate a system of exploitation by an inter-
national authority for all the world's resources.

It may even be that the Sea-bed Committee's concentration upon the "new"
idea of a common heritage and its rejection of the traditional principles of res
communis and the high seas have in fact served to weaken the truly important
principles of environmental protection inherent in the traditional concepts and
principles concerning the high seas: i.e. that the high seas are open to all nations
but with the obligation to exercise the rights of uses with "reasonable regard"
for the rights of others, as laid down inter alia in the 1958 Geneva Convention.

One may particularly question the wisdom of defining the "Area" to be covered
by the "common heritage" formula as being the sea-bed and subsoil. This seems
to set off the sea-bed and subsoil against the superjacent waters and the resource
thereof. This appears to imply that the rights of States with regard to the high
seas are not subject to such general obligations as would seem to follow from the
view that the sea as such is a "common" or "shared" resource. But the "freedom
of the seas" is not a freedom per se. The term is a misnomer in the sense that no
person or ship is free to travel the high seas without flying the flag of some
country. While each State can, as a general rule, exercise jurisdiction only over
a ship flying its own flag, it has a perfect right and often even a clear obligation
to do so, as set out in Article 5(1) of the 1958 Convention on the High Seas, and
particularly as regards pollution, in Articles 24 and 25. As in the case of
non-marine pollution it is really the authorities of all States taken together
which have the necessary powers to take the action which is required in order to
abate or prevent pollution on a global or regional scale, but they have refrained
from doing so in practice. The steps each State has taken until now in its own
sphere of sovereignty have not been sufficient.

The reason is obvious. Measures taken by one single State to restrict the freedom
to perform acts which individually or together with other acts constitute hazards
to the marine environment, would only have effects for the ships of that one
State. The freedom of the seas, which de jure is solely a division of competence
among the authorities of different States, has therefore become a de facto free-
dom for the individual to disregard the interests of others in the continued
exercise of the freedom of the seas.

But this does not mean that national sovereignty or the legal principle of the
freedom of the seas should be abolished or replaced by another rule which gives
one or more nations a prerogative to visit and search vessels of other nations
while they are on the high seas. No single nation can perform the task of policing
the sea, and a mutual right of control might easily lead in practice to serious
conflicts. It may well be said that one cannot expect to save the marine environ-
ment by applying the present international law of the sea, the main principles of
which were developed in the age of sailing ships. However, the freedom of the seas or the division of competence are not inadequate in themselves. What is needed is cooperation among States to develop rules supplementing the existing but as yet imprecise standards of reasonableness in the use of the sea, and above all the exercise of effective jurisdiction by all States to prevent such acts or activities which are carried out without "reasonable regard to the interests of other States in their exercise of the freedom of the high seas", to echo the wording of the basic principle contained in Article 2 of the Geneva Convention.

Of equal importance as one of the fundamental elements of the obligation to protect the rights of other States in the environment, as well as in the use of the sea, is the statement of the International Court of Justice in the Corfu Channel Case of 1949:

"Such obligations are based, not on the Hague Convention of 1907, No. VIII, which is applicable in time of war, but on certain general and well-recognized principles, namely: elementary considerations of humanity, even more exacting in peace than in war; the principle of the freedom of maritime communication; and every State's obligation not to allow knowingly its territory to be used for acts contrary to the rights of other States" 28.

VII. Other Uses of the "Heritage" Concept

If one looks at the French version of the ICNT, we see that Article 136 uses the wording "patrimoine commun". "Patrimoine" is defined in French both as "heritage" ("des biens que l'on a reçus par héritage de ses ascendants") and in the more neutral form of fortune or ownership ("l'ensemble des droits ... d'une personne")29.

It may be noted in this connection that the idea of a "patrimoine" or "heritage" seems to have attained a degree of popularity in new creations of the law of the sea. The precursor of the exclusive economic zone, the Latin American 200 mile zone established by several declarations in the 1940's and 1950's, was regarded as a zone sui generis20, as the exclusive economic zone is now. Before the wording "economic zone" became generally accepted at the UNCLOS as the name to be given to the new zone envisaged as a predominant part of the coming compromise, one used to refer to it by the Latin American terminology: it was called the "mar patrimonial", often literally translated into English as "the patrimonial sea". The more neutral term "economic" came, however, to prevail over "patrimonial".

Here, the idea of "patrimony" or "heritage" may perhaps seem more apposite than in the case of the international sea-bed area. As far as the economic zone is concerned the terminology has the merit of classifying the relevant part of the sea as belonging (at least in certain respects) to one single coastal State, as opposed to other States. It has the merit of distinguishing this part, which is subject to coastal State sovereign rights and jurisdiction, from the areas beyond the 200 mile limit which no single state can claim as its special "patrimony" or "heritage". But for those latter areas these terms do not express any new rule of law like that for the economic zones. The high seas beyond 200 miles may be
regarded as nobody's or as everybody's "heritage". But this does not provide any solution as to the question at issue: viz., should the system of common exploitation be that of the Geneva Convention on the High Seas (Article 2), or that of an international authority and an international enterprise?

As regards the economic zones, the idea of "patrimoine" or "patrimony" is related to the somewhat sex-discriminating terminology of "patrie" or "fatherland". It conveys the same idea of exclusiveness inherent in the notions of property and sovereignty, describing the area or country as being connected to one State or one nation, in contrast to others. This notion of exclusiveness or contrast is not present when one refers to something as being the "common heritage" of mankind in its entirety; and it may therefore be said that the term "heritage" is more apposite when applied to the waters which are subject to national jurisdiction.

"Heritage" is also the word used by the UNESCO Convention of 16 November 1972 concerning the "Protection of the World Cultural and Natural Heritage". In this case, it seems that the "heritage" concept is well suited to the "cultural" content as this is clearly the result of what has been created and acquired by earlier generations.

The world's "cultural and natural heritage", as that term is used in the Convention, cannot be placed on the same level as the "common heritage" concept as applied to sea-bed questions, if by "common heritage" one means a system whereby the resources are subject to administration and exploitation by an international authority. Neither the cultural nor the natural heritage can be placed in their entirety under the administration of an international body. A proposal to this effect would be totally unrealistic.

One cannot avoid the existing system of national authorities, each of which is competent within its own sphere of jurisdiction. The rights of all nations in the environment must be protected by the harmonization of national policies aimed at furthering the common interest of environmental protection, and by the elaboration of further rules limiting the freedom of each State to take or to permit action which does not have reasonable regard to the interests of other States or to the interests of the world as a whole. This is where a "common heritage" concept might be useful and not as a principle concerning the general internalization of all exploration and exploitation activities.

**VIII. Conclusion**

In its ordinary meaning the phrase "common heritage of mankind" signifies no more than what has long been recognized in general international law relating to the high seas: namely that the resources are not the exclusive property of any single nation, that all nations have an inherent right to take part in the exploitation, and that they cannot exercise their rights without due regard to the corresponding rights of others.

As such, i.e. with this meaning, the concept is no innovation. It conveys ideas already accepted in the law of nations and probably means no more than what
follows from other terms such as "shared resources". To some extent the word "heritage" may be useful in indicating the fact that the resources are not the fruits of the efforts of present generations, and that their rights must consequently be exercised with due regard for the rights of future generations.

In addition to this general concept of "common heritage" one has the specific meaning given to the term by the U.N. Sea-bed Committee in 1969. Here, the term is intended to cover a certain system of exploitation, i.e. exploitation by an international authority, as opposed to exploitation by individual States and companies, and a distribution of the profits which may thereby be obtained.

It may seem that this specific concept does not add anything beyond what would have to be set out in separate provisions concerning exploitation and distribution. And while the general concept of "common heritage" (in the ordinary sense of the words used) may have a certain interest in describing the world's rights with regard to the environment, it would appear that the specific model of the Sea-bed Committee is not applicable in environmental law in general. Clearly, the exploitation of environmental resources must, in most instances, be carried out under the control of one sovereign State, as opposed to an international organization. At the present stage, one obviously cannot expect all activities having an impact on the environment and affecting the interests of more than one State to be left to an organization or, even, all profits obtained by the exploitation of resources to be subject to distribution by an international authority. Such a proposal would be entirely unrealistic.

Accordingly, it may be noted that the concept "natural heritage" of the world in the UNESCO Convention clearly refers to the general and ordinary meaning of the words. It does not lay down any principle to the effect that uses should be channelled through an international authority and be subject to the distribution of profits by that authority.

During the later development of the U.N. Conference on the Law of the Sea the tendency has been towards the compromise provided by the parallel system, where certain areas are reserved for the system of exploitation by international organs, while other areas are left open to individual States or companies, as in the traditional system of the high seas. Nevertheless, there is a general statement of principle in Article 136 of the Informal Composite Negotiating Text, according to which the "Area" (which refers to the sea-bed and the subsoil, as opposed to the superjacent waters) is the "common heritage" of mankind. If given the meaning put forward in the Sea-bed Committee, namely, that "common heritage" implies a certain system of exploitation through, or together with, an international body, this would mean that the term "common heritage" would only refer to that very specific system which might eventually be the outcome of the UNCLOS sessions. In this light it might be argued that the development of the debates at UNCLOS has demonstrated that the "common heritage" notion as such is devoid of legal meaning - as indeed some suggested at the very beginning\(^ {31} \). It becomes merely a flexible label to be put upon whatever compromise might be reached by the UNCLOS and particularly by its First Committee, and it is to be hoped that it will not be interpreted a contrario with the implication that the sea itself and the living resources thereof are not part of the "common heritage" under Article 136 and are therefore subject to national
appropriation or unrestrained exploitation without regard to the interests of other States and to the need for protecting the marine environment in general.

This does not mean that the efforts to establish an international regime for the ocean floor are not commendable in themselves and should not be supported, but that the concepts have been too narrow to be applicable to the international concern for the environment in general.

Further, the principles and provisions worked out at the LOS Conference may have a certain bearing on the efforts being made to achieve a New World Economic Order, a concept which has undoubtedly played an important role in UNCLOS deliberations and in the positions taken, especially those taken by developing nations ("the Group of 77"). But here again it must be remembered that the UNCLOS setting is fairly unique in that the "common heritage" of the international sea-bed area relates to resources situated beyond the limits of national sovereignty (or sovereign rights) which have not to date been subject to any great extent to economic exploitation; while a New Economic Order is intended to establish a more just distribution between peoples of the benefits which derive from resources located within the limits of national sovereignty and from activities already undertaken.
Footnotes

4 See inter alia Fleischer, Fiskergrensen, fiskerigrensen og den økonomiske sone (Oslo, 1976), pp. 157 et seq.
5 Cf. the wording of G.A. Res. 2750 (XXV) of Dec. 17, 1970, third and fourth paragraphs of the preamble ("comprehensive conference on the law of the sea"); "the problems of ocean space are closely interrelated and need to be considered as a whole") and operative paragraph two: "a broad range of related issues including those concerning the regime of the high seas, the continental shelf", etc.
6 See Fleischer, "The Right to a 200 Mile Economic Zone or a Special Fishery Zone", 14 San Diego Law Review 1977, 548 et seq.
7 For a different opinion see J. C. Phillips "The Exclusive Economic Zone as a Concept in International Law", 28 I.C.L.Q. 1977, 585 et seq., in particular note 1, p. 585, where it is stated that "the concept of an exclusive zone .... has no present standing in international law".
10 Principle No. 1: "The seabed and the ocean floor, and the subsoil thereof beyond the limits of national jurisdiction (hereinafter referred to as the area), as well as the resources of the area, are the common heritage of mankind"
12 Cf. G.A. Res. 2749 (XXV), principle No. 1, quoted supra, n. 10.
14 Supra, n. 1.
15 Supra, n. 11.
16 Supra, n. 10.
18 ICNT, Article 141.
19 G.A. Res. 2749 (XXV), principle No. 11.
20 UNRIAA Vol. III, pp. 1905 et seq.
21 ICJ Reports 1949, pp. 1 et seq.
23 See ICNT, Article 150, concerning policies, *inter alia* with a view to ensuring "just, stable and remunerative prices for raw materials .... which are also produced outside the Area".

24 It seems that the concentration upon First Committee (international sea-bed area) issues has been evident as of the 1977 (sixth) session of the UNCLOS. At that session, the first three weeks were not only of the First Committee.

25 See e.g. Articles 2, 4, 5, 6 and 7 of the Convention on the High Seas.

26 Article 5(1) states in part: "... Ships have the nationality of the State whose flag they are entitled to fly. There must exist a genuine link between the State and the ship; in particular, the State must effectively exercise its jurisdiction and control in administrative, technical, and social matters over ships flying its flag."

27 Article 24 provides:

"Every State shall draw up regulations to prevent pollution of the seas by the discharge of oil from ships or pipelines or resulting from the exploitation and exploration of the sea-bed and its subsoil, taking account of existing treaty provisions on the subject."

Article 24 provides:

*1. Every State shall take measures to prevent pollution of the seas from the dumping of radioactive waste, taking into account any standards and regulations which may be formulated by the competent international organizations.
2. All States shall cooperate with the competent international organizations in taking measures for the prevention of pollution of the seas or air space above, resulting from any activities with radioactive materials or other harmful agents."*

28 ICJ Reports 1949, p. 22.


31 Thus some views put forward in the Sea-bed Committee, see supra, n. 11. For a more favourable view of the "common heritage" as a legal concept see Piquemal, op. cit., n. 9, who argues that it is different from the traditional concept of *res communis* in putting the accent on "une participation et administration commune" and in that it "subordonne la liberté à l'équité" (p. 28).


33 Cf. too in this connection the rather pessimistic evaluation of the ICNT Part XIV on "Development and Transfer of Marine Technology", which has been described as containing "very general formulations which are devoid of any substance", see Miles, "The structure and effects of the decision process in the Sea-bed Committee and the Third United Nations Conference on the Law of the Sea", 31 *International Organization* 1977, 159, et seq., at 170; cf. also Prill op. cit., n. 32, 837 on "Platituden Oder mehr?"
At the time that the slogan "One world or none" was being given wide publicity, shortly after the birth of the UN, the emphasis of its implications was no doubt placed on the necessity for a world-wide intergovernmental organisation in order to preserve international peace. Of course, even then a further implication, the international significance of the respect for human rights and fundamental freedoms, was already recognized, though perhaps not fully, at least not as far as its impact on what later came to be known as "the new international economic order" was concerned. At any rate, the third implication, the concern for the environment only later acquired a prominent place on the international plane.

Nowadays, these three levels of universalism and their interaction are perhaps better understood. A signal in this respect was the provisional adoption by the International Law Commission in 1976 of article 19 of its Draft Articles on State Responsibility which qualified as "international crimes" serious breaches of an international obligation of essential importance for "(a) "... the maintenance of international peace and security ..."; (c) "... safeguarding the human being ..." and (d) "... the safeguarding and preservation of the human environment ...".

No doubt this legal expression of international concern for the environment was influenced by the UN activities in this field, culminating in the Stockholm Conference. The Declaration of Principles adopted there does, however, already highlight a basic difficulty in the elaboration of international environmental law. Indeed Principle 21 proclaims in one and the same breath as it were "the sovereign right" of all States "to exploit their own resources pursuant to their own environmental policies" and their "responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction". Clearly the wording of this principle conceals an inherent tension between the concept of the "permanent" sovereignty of a State over its own territory including the natural resources thereon and the concept of the indivisibility of the human environment.
The formulation of Principle 21 also seems to suggest a particular approach to international environmental law - the "classic" approach of dealing with it in terms of "bilateral" responsibility of one State for damage caused to another State.

One might call this approach the "Trail Smelter approach" in view of the well-known decisions in 1938 and 1941, of the US-Canada Arbitration Tribunal. The second of these decisions contains the statement almost invariably quoted in writings on international environmental law, namely: "... that, under the principles of international law ... no State has the right to use or permit the use of its territory in such a manner as to cause injury by fumes in or to the territory of another or the properties or persons therein ...

From a theoretical point of view the concept of "common heritage of mankind" and of "shared natural resources" as applied to the human environment embody the opposite approach.

Here the starting point is not the division of the world into national territories of sovereign States, but rather the indivisibility of the human environment, or at least of that part of it which is considered to be a "shared resource" of two or more States. In fact those two concepts suggest a particular substratum which escapes the division just mentioned and which, ideally, should be managed by a common authority rather than be "regulated" ex post facto using the rules of State responsibility for damage caused to another State.

The polarity between the two approaches is also evident when one makes a comparison between the treatment of human movement across frontiers under the rules of international law relating to international trade in the larger sense of the word (the modalities of ius communicationis) and the treatment of the natural movement of and "communication" between elements in the human environment.

Indeed there is a clear analogy between the old ius communicationis and the new international concern for the environment: is it not true that the activities of man wholly within the frontiers of one State are "carried over" by the irresistible forces of nature into the territory of other States, thus affecting human activities wholly within the frontiers of another State?

Then should not the recognized rights of every State to control human movement across its frontiers have a counterpart in an obligation on every State to control human activities within its frontiers which as a result of the uncontrollable forces of nature "spill over" into the territory of other States, in other words internalize such activities as far as their environmental impact is concerned?

We can in fact extend the analogy somewhat. The three successive steps in the "liberalization" of international trade - entry, non-discriminatory treatment, avoidance of non-tariff barriers - are "mirrored" as it were by the three phases of international environmental law under the shared resources model: internalization duty, non-discrimination, and the principle of equitable utilization. On the other hand, we can discern a meeting-point: in the law of the sea the
search for freedom of international trade has resulted in the withdrawal of a particular substratum, the high seas, from the territorial sovereignty of national States, and at present the "equitable utilization" of at least some of the natural resources of the seas (the mineral resources of the sea-bed and its subsoil "beyond national jurisdiction") is claimed through the application of the concept of the common heritage of mankind 8!

Obviously the classic "Trail Smelter" approach can be developed in the opposite direction. Thus, responsibility ex post facto naturally leads to the elaboration of primary rules of conduct for the protection of the environment9, possibly ad hoc and in concreto as the result of consultations, which in turn may be the result of advance notification of plans for a new utilization of natural resources. On the other hand, the "common heritage of mankind" and "shared resources" approach cannot escape the reality of the division of the world into territories of independent States, and of the "inequalities" between those States in terms of geographical position (including natural conditions), stage of technological development and even social systems10.

It is therefore not surprising that in the elaboration of international environmental law, notwithstanding the polarity of the two approaches, the various intergovernmental bodies which deal with this matter from a different starting point arrive at very similar results!

This is illustrated by a comparison between some relatively recent instruments in the field of environmental law, notably (1) the "Draft Principles of Conduct in the Field of the Environment for the Guidance of States in the Conservation and Harmonious Utilization of Natural Resources Shared by Two or More States" 11, and (2) the various decisions of the Council of the Organization for Economic Co-operation and Development (OECD) relating to the environment 12.

The UNEP Principles mentioned under (1) are based, as the title indicates, on the "shared resources" concept. The OECD documents mainly deal with "trans-frontier pollution", a notion which rather corresponds to the classic "Trail Smelter" approach. The UNEP working group carefully (and probably wisely!) refrained from trying to define the term "natural resources shared by two or more States"13. How, indeed, is one to define a "shared resource" from an environmental point of view without the risk of encroaching too much on the very essence of the traditional sovereignty of each State over the "static" elements of the environment: the land and subsoil, inland waters and the air-space above, which together form its "territory"? Clearly the definition of shared resources requires a functional approach which would emphasize the non-static aspect of the environment, i.e. the natural movement of, and between, its elements.

One definition, suggested during the discussion of this topic in the working group14, reads: "The term 'shared natural resource' means an element of the natural environment used by man, which constitutes a biogeophysical unity and is located in the territory of two or more States" seems to go somewhat in this direction15. On the other hand, the "understanding" of the government of Brazil, recorded in the Report, to the effect that shared resources are "those in respect of which sovereignty is shared between States" obviously takes us back
One is reminded here of the discussions in international fora of the definition of “international watercourses” for the purposes of the codification and progressive development of the international law relating to the non-navigational uses of international watercourses. Obviously the choice of a definition should be determined by the function of the rules to be applied (regulation of navigation, of consumptive uses, of pollution etc.), but it is equally clear that the geographical position of States largely influences their stand as far as an a priori definition is concerned!

At this point it is interesting to note the work of another international group, the WHO/UNEP meeting of experts designated by governments on the legal aspects of weather modification. This working group was very much aware of the UNEP “shared resources” principles. Significantly, during the first meeting there was no agreement on “whether the atmosphere and its weather system or parts thereof could be regarded as shared natural resources”, but there was agreement that, even if it were assumed that the shared resources concept should apply, “... weather represents a special case with its own particular characteristics and thus the principles required for weather modification have to take those characteristics into account”. Nevertheless, the draft principles adopted at that meeting bear a close resemblance to the principles concerning shared resources! Indeed the first of the nine principles adopted reads as follows: “The atmosphere is a global resource whose protection and use is the legitimate concern of the international community”!

In fact, most of the weather modification activities currently conducted in various countries consist of artificial interference by man in the natural movement known as the hydrologic cycle. Indeed, at the level of municipal legislation and jurisprudence, some States treat “atmospheric water” and “artificial water”, derived therefrom by cloud seeding, as objects of property rights vested either in the State or in private persons such as the owner of the “underlying” land or even the “producer” of the artificial water.

The reluctance of States to designate the atmosphere as a “shared resource” at the international level also appears in some of the comments by governments on the results of the first meeting of the working group. For instance, the USA advocates that “It should be made clear that the principles would only apply to deliberate weather modification activities conducted for the purpose of rain and snow enhancement, fog dispersal or hurricane ameliorization, for example, and not to inadvertent weather changes resulting from high-altitude jet flights, pollutants emitted from smokestacks, etc. ...”.

Obviously, according to the “Trail Smelter” approach there is no need to define the “resource” to which the rules of international environmental law apply.

Nevertheless, the causal connection between an activity conducted by certain people and damage suffered by others, implicit in the term “transfrontier pollution”, seems to necessitate the determination of a functional “field” of natural movement, which comes close to the equally functional determination of a particular substratum as a “shared resource”.

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This is particularly apparent if, following the classic approach, one is willing to take into account the cumulative adverse effects of the activities of several people on the common interest of a not necessarily individually determined group of other people.

Within the "transfrontier pollution" approach the remaining gap between the results of the two opposite approaches in this respect is characteristically filled to a certain extent by providing for "solidarity" between the States involved. Thus, title B of the OECD principles concerning transfrontier pollution (adopted 14.11.1974) bears the heading "International Solidarity" and postulates "a concerted long-term policy for the protection and improvement of the environment in zones liable to be affected by transfrontier pollution", and enjoins countries to "seek, as far as possible an equitable balance of their rights and obligations" with regard to those zones.

To proclaim something to be a "shared resource" or a "common heritage" for that matter is one thing; to arrive at an acceptable solution of the distribution problem, inherent in such a proclamation, is quite another! In this respect UNEP Principle 1 does no more than make a passing reference to "the concept of equitable utilization".

No systematic attempt is made to translate this "concept" into the realm of situations arising in practice.

It must of course be recognised that such a translation is a tremendously difficult job. In the first place, there is "the present state of the art", which often makes it difficult to assess the real impact of any human activity on the environment, as well as the feasibility (both technical and economical) of any method to avoid or reduce such impact.

But apart from these, and more important from a legal point of view, there is the inherent necessity when dealing with "equitable utilization" to establish priorities, as far as conflicting uses are concerned.

Obviously there is one "type of relationship" between a human activity and nature which in any case falls outside the scope of "equitable utilization"; namely the wilful interference with the natural flow itself (possibly also through a change in one of the "static" elements wholly within the territory of one State). As noted in the Report of the ILC on the work of its 31st session (1979) it was ".... unthinkable that a nation which lived on the banks of a river should lose that river entirely, as a result of the application of modern technology in the interests of a higher riparian State. It was equally unthinkable that a lower riparian State should refuse to receive a natural flow of water by erecting a dam for the benefit of its own hydroelectric resources, thereby causing that water to flood valuable land in a neighbouring State".

But determining the concrete contents of the concept of equitable utilization is less easy when other "types of relationship" are involved, such as the conflict between present and future uses (the conservation of the shared resource) or between different uses. If the situation is such that in fact the present or a particular use in the territory of one State affects the future or a different use
(practically) entirely in the territory of another State, the question inevitably arises whether the difference between States in "geographical advantage" can reasonably be expected to be "ironed out" by generally accepted rules of international law. Moreover, the concept of equitable utilization in its international application raises other questions too. One of these is connected with the unequal spread of "technology" between States. The state of technological development within a State cannot but influence the choice of priorities in the field or its environmental policy. Nor can one ignore that "nature" and "technology" are not the only factors which determine an environmental policy but that its application may also involve a choice between "social systems".

Obviously solving the conflict of uses by allocating uses between States cannot wholly ignore those factual differences between States, and in fact the Helsinki Rules, although clearly based on the "shared resources" concept include among the "relevant factors" in determining equitable utilization some which are based on these "natural" differences.

The UNEP principles are, of course, placed within a different "context", namely the "use" of "the environment". Their title clearly reflects this. They are principles "of conduct in the field of the environment" even though that conduct relates to "the conservation and harmonious utilization" of shared natural resources. The relationship between the two notions is not very clear however. In this respect it is significant that Principle 3 starts out with a formula taken word for word from Principle 21 of the Stockholm Declaration, quoted above, which as we have seen, is based, on the "Trail Smelter" approach. Of course, the same UNEP Principle 3, in its para. 3, clarifies the "damage to the environment of other States" and there introduces the notions of "repercussions on the utilization of the resource by another sharing State" and of threatening "the conservation of a shared renewable resource", thereby recognizing, it would seem, the link between the "static" and the "dynamic" elements of the environment.

However, in the absence of a further elaboration of the concept of equitable utilization of both, UNEP Principle 3 falls back so to speak on the "internalization duty". Indeed, para. 3 of that Principle states that "... it is necessary for each State to avoid to the maximum extent possible and to reduce to the minimum extent possible the adverse environmental effects beyond its jurisdiction of the utilization of a shared natural resource ...". Significantly, no such internalization duty is contained in the WMO/UNEP Principles on weather modification.

Nor is a specific internalization duty provided for in the OECD provisions. However, a similar purpose is served there by para's 2 and 3 of title B: international solidarity although, in conformity with the Trail Smelter approach, those paragraphs deal with the prevention and control of "pollution", which is not necessarily the same thing as "adverse environmental effects" as clarified in the UNEP Principles.

On the other hand, but on a different level, the so-called "Polluter Pays Principle" is in a way a translation of the internalization duty, and this principle has been affirmed in other OECD provisions.
As has already been suggested above, this "internalization" duty is so to speak the counterpart, in respect of natural movement, of the national control of human movement across frontiers. Since it refers to avoidance "to the maximum extent possible" and to reduction "to the minimum extent possible", it obviously leaves open the possibility of different priorities as between States. In this connection the non-discrimination duty is of great importance. UNEP Principle 13 enunciates this duty in the following terms: "It is necessary for States, when considering, under their domestic environmental policy, the permissibility of domestic activities, to take into account the potential adverse environmental effects arising out of the utilization of shared natural resources, without discrimination as to whether the effects would occur within their jurisdiction or outside it".

Not surprisingly, it is at this level that the shared resource approach and the Trail Smelter approach meet! Indeed Title C of the OECD principles concerning trans-frontier pollution provides for the same principle of non-discrimination albeit in a more detailed form.

The procedural counterpart of this substantive rule of non-discrimination is the equal access under municipal law to procedures, for people who are affected or are likely to be affected in their personal and/or proprietary interests by activities relating to the environment, regardless of whether those interests are located inside or outside the territory where such activities are performed or planned.

Here again UNEP Principles and OECD provisions are substantially the same, although the former are couched in much less stringent terms. Indeed UNEP Principle 14 declares that: "States should endeavour, in accordance with their legal systems and, where appropriate, on a basis agreed by them, to provide persons in other States who have been or may be adversely affected by environmental damage resulting from the utilization of shared natural resources with equivalent access to and treatment in the same administrative and judicial proceedings, and make available to them the same remedies as are available to persons within their own jurisdictions who have been or may be similarly affected".

As has already been pointed out, the OECD provisions are somewhat bolder in this respect. This difference can partly be explained in terms of the different composition of the respective groups of States which adopted the provisions. Eastern block and some Third World States are not very anxious to have what they consider to be inter-State conflicts decided even by their own courts!

On the other hand, it should not be forgotten that UNEP Principle 13 also refers to equivalent "treatment in" administrative and judicial proceedings, and to "the same remedies", which might be interpreted as requiring the same financial compensation to be given.

Furthermore, the OECD provisions in the earlier resolution on "Equal Right of Access" are limited to the purely procedural side of the question: equivalent rights in respect of access to information, "participation in hearings and preliminary enquiries", and "recourse to and standing in" administrative and
The later recommendation (1977) touches on the matter of financial compensation in its Title B (legal protection of persons) in para. 5, where it states that: "where in spite of the existence of a liability ceiling instituted by an international agreement, there exists in a country a system of additional compensation, financed or administered by the public authorities, then such country should not be required, in the absence of reciprocal arrangements, to grant entitlement to such additional compensation to victims of trans-frontier pollution ..."

Incidentally, a somewhat similar problem is responsible for the use of the word "utilization" alone (and not also "conservation" of natural resources) in UNEP Principle 14. During the meetings of the working group it was pointed out by an expert of an African country that, for conservation reasons, it was forbidden in his State to shoot elephants, but as a counterpart farmers were given compensation out of State funds for damage to their crops caused by elephants. Obviously this country did not wish to give the same compensation to farmers of a neighbouring country who were allowed in their own country to protect their crops by shooting elephants!

The question of financial compensation raises another problem which arises out of the diversity of national environmental protection rules and procedures, namely the question of the conflict of laws and the competences of administrative and judicial bodies.

UNEP Principle 12, para. 2, limits itself to enjoining States ".... to develop further international law regarding liability and compensation for the victims of environmental damage arising out of the utilization of a shared natural resource to areas beyond their jurisdiction". It might be argued that the concept of shared resources would tend to accept the competence of the administrative and judicial bodies both of the "place of action" and of the "place of result" and would also tend to a cumulative application of the substantive rules of both places leading to the application of the law most favourable to the victim. Nevertheless, the principles are silent on this matter. Here again the normal process of choice of law at the level of the conflict of laws is "mirrored" in the tendency towards a cumulative application in the shared resources approach.

As has been pointed out above, the "shared resource" concept would ideally tend towards the common management of a resource by an independent international institution.

On the other hand, it has been shown that the Trail Smelter approach, which has as its starting point the concept of the international responsibility of a State ex post facto for damage caused to another State, must inevitably tend on further elaboration towards the organization of international procedures preventing the necessity of invoking that responsibility ex post facto. Characteristically, the two approaches meet in the field of fact-finding (in the larger sense of the word). Indeed the UNEP principles - and to a certain extent the WHO/UNEP Recommendations - on the one hand, and the OECD provisions on the other, have very similar procedures in this field.
Measures falling short of the international management of the resource range from monitoring duties and exchange of information through advance notification and consultations to a type of dispute settlement.

Thus, UNEP Principle 4 provides that "States should make environmental assessments before engaging in any activity with respect to a shared resource which may create a risk of significantly affecting the environment of another State or States sharing that resource", while Principle 8 urges States to "engage in joint scientific studies and assessments" in order to lay a "basis of agreed data". There next comes the duty to consult with the other State or States concerned. Principle 6 provides for such a duty in the case of "plans to initiate, or make a change in, the conservation or utilization of the resource which can reasonably be expected to affect significantly the environment in the territory of the other State or States".

Obviously, such a duty to consult, although not necessarily dependent upon notification of the plans being given in advance to the other State or States (see Principle 6, para. (1) sub-para. (d)) will become more effective if there is a duty of advance notification of the plans; indeed such a duty is laid down in Principle 6, para. 1, sub-para. (a), and reinforced by the duty (sub-para. (c)) to provide upon request "specific additional pertinent information concerning such plans". There is no absolute duty not to execute the plan before the consultations have ended.

However, Principle 7, referring on the one hand to the "principle of good faith" and on the other to the need "to avoid unreasonable delays ... in carrying out development or conservation projects" gives a flexible indication of the procedural requirements in this respect.

Of course, consultations cannot guarantee a satisfactory solution. As in other fields of inter-State transactions, the assistance of a third party may be required, but States are generally reluctant to provide in advance for such third party involvement. The cautious way in which Principle 10 is drafted reflects this hesitation.

This principle states that: "States sharing a natural resource should, when appropriate, consider the possibility of jointly seeking the services of any competent international organization in clarifying the environmental problems relating to the conservation or utilization of such natural resource".

Environmental assessments, notifications, consultations and assistance from a third party still leave open the possibility of a fundamental dispute between States. Principle 11 deals with this situation. In its first paragraph it simply refers to general rules of international law relating to disputes between States. Along with the Charter of the United Nations, reference is made here to the "Declaration of Principles of International Law concerning Friendly Relations and Co-operation between States in accordance with the Charter of the United Nations", a declaration unanimously adopted by the General Assembly of the United Nations in 1970. This reference is not without significance, because the declaration - although far from representing a giant step in the development of international law - does add a little to the progress being made in methods of
achieving a peaceful settlement. It will be recalled that the UN Charter, while
enjoining members in Art. 2, para. 3 to "settle their international disputes by
peaceful means in such a manner that international peace and security and
justice are not endangered", rather emphasizes in Art. 33 the free choice of each
State in the method of settlement - "(negotiation, enquiry, mediation, con-
ciliation, arbitration, judicial settlement, resort to regional agencies or arrange-
ments, or other means of their own choice).

The declaration goes a little bit further in providing that "the parties of a dispute
have the duty, in the event of failure to reach a solution by any one of the above
peaceful means" (i.e. the means listed in Art. 33 of the UN Charter) "to con-
tinue to seek a settlement of the dispute by other peaceful means agreed upon
by them". Furthermore, the same declaration slightly limits the freedom of
choice of peaceful means, by stating that: "In seeking such a settlement the
parties shall agree upon such peaceful means as may be appropriate to the
circumstances and nature of the dispute". This opens up the possibility of
making distinctions as far as the particular type of dispute is concerned, in-
cluding taking the substratum involved in the dispute into account. Now, clearly,
the necessity for "cutting the Gordian knot" one way or another does not have
the same urgency in all cases. There are of course disputes, ".... the continuance
of which (is) likely to endanger the maintenance of international peace and
security" (Art. 33 and 34 of the UN Charter) and in such cases the Security
Council of the UN has a special responsibility and a right to take the initiative in
order to reach a settlement. On the other hand, there are international situations
which require disputes to be settled, one way or another, for other reasons
which transcend the bilateral relations between the parties to the dispute. In a
recent (as yet unpublished) international arbitral award (of December 9, 1978),
national air services were considered to be a type of substratum which
called for particular restraint when applying the normal rules relating to dis-
putes, in this case the unilateral application of counter-measures.

It is clear that in the field of "environmental disputes", particularly disputes
relating to the conservation and utilization of shared natural resources, the use
of reprisals as a means of restoring the balance and inducing a settlement is
counter-productive, and the need for an impartial decision is particularly great.

The second paragraph of Principle 11 reflects this particular "nature of the
dispute", and develops the general rule laid down in the UN declaration by
stating that: "In case negotiations or other non-binding means have failed to
settle a dispute within a reasonable time, it is necessary for States to submit the
dispute to an appropriate settlement procedure which is mutually agreed by
them, preferably in advance. The procedure should be speedy, effective and binding" (emphasis added). Furthermore, the third paragraph states: "it is
necessary for the States parties to such a dispute to refrain from any action
which may aggravate the situation with respect to the environment to the extent
of creating an obstacle to the amicable settlement of the dispute".

Consultations concerning specific plans to initiate or make a change in the
conservation or utilization of a shared resource, and even third party settlement
of disputes procedures, have those drawbacks which are inherent in ad hoc
procedures and decisions in this field. They fall short of an overall common
eco-management in relation to such shared resources. On the other hand, it is clear that principles of the kind discussed here cannot by themselves institute such common management or even encourage such measures generally and for all "shared resources". Apart from the "necessity to co-operate" (Principle 1) which has already been mentioned, and some more specific recommendations laid down in Principles 8 (joint scientific studies and assessments) and 10 (services of any competent international organization), already discussed above, Principle 5 provides that "States sharing a natural resource should, to the extent practicable, exchange information and engage in consultations on a regular basis on its environmental aspects". Furthermore, Principle 2 urges the conclusion of "bilateral or multilateral agreements .... in order to secure specific regulations of their conduct in this respect ..." including the consideration by States of "the establishment of institutional structures....". Such permanent institutional structures could indeed develop a common environmental policy in relation to the shared resource, including common conservation objectives, common priorities and equitable distribution of uses, more successfully than ad hoc procedures and decisions are able to.

The WMO/UNEP Recommendations, as adopted during the second meeting of government experts, are less elaborate and less stringent but generally follow the same pattern, with the notable exception that there is no reference at all to dispute settlement!

Thus, point III of the Recommendations deals with something akin to monitoring and exchange of information, point V with environmental assessment, while points IV and VII deal with advance notification and consultations.

In the OECD principles concerning transfrontier pollution (1974), title E ("Principle of information and consultation") closely corresponds to shared resources Principles 6 and 7, while Title II ("Disputes") is almost identical with Principle 11, para. 2. Title G ("Exchange of scientific information, monitoring measures and research") is more or less the counterpart of Principles 5 and 8, and Title H ("Institutions") and Title I ("International Agreements") correspond to Principle 2.

In discussing the definition of shared resources, the propensity of international environmental law, and particularly the shared resources approach, to overstep the limits of the purely "environmental" field has already been hinted at. It is indeed difficult to separate the "dynamic" from the "static" elements. At the same time this approach cannot but have an impact on other branches of international law. Three examples may illustrate this point.

When dealing with equal access to procedures of municipal law some problems relating to financial compensation were noted, which are the result of different national methods of dealing with environmental issues. As far as the principle of non-discrimination, discussed above, is concerned, the link between "dynamic" and "static" elements appears for instance in the relevant OECD provisions.

There one reads: "In the event of difficulties arising between countries concerned because the situations resulting from transfrontier pollution and domestic
pollution are manifestly non-comparable, for example as a result of uncoordinated land use policies in regions concerned by transfrontier pollution, those countries should strive to arrive at a mutually agreed arrangement which ensures to the largest extent possible the application of the principle referred to in sub-paragraph (a) of this paragraph (this being the non-discrimination principle).

The interplay between international environmental law and the regulation of international trade and investments is somewhat different. There is indeed a link between "human movement" across frontiers and the "movements of nature"; the utilization of natural resources being generally connected with the production of goods for human consumption.

Accordingly, diversity in national environmental protection measures, representing in essence a difference in national priorities, may affect both the import and the export of goods.

Indeed it has sometimes been suggested in public discussion that in order to encourage goods the production of which does not have adverse environmental effects, goods produced abroad and having such effects (anywhere) should not be admitted into the national territory, and that the export of goods which are produced in the national territory without such adverse effects (anywhere) should be subsidized! But no government has as yet taken such drastic measures. However, the question remains of the relationship between a (relative) freedom of international trade and investment, and (national) environmental policy. Not surprisingly, particular attention is paid to this topic in the OECD provisions. The main principle provided for there in this respect is the so-called "Polluter Pays Principle" which culminates in prohibiting subsidizing measures of pollution prevention and control. The counterpart of this, namely non-tariff barriers to trade, is the subject of para. 9 of the same principles, which reads: "Measures taken to protect the environment should be framed as far as possible in such a manner as to avoid the creation of non-tariff barriers to trade".

It would seem that there is an inherent tension between the requirements of a free flow of international trade and investments, and diversity in national environmental policies!

On the other hand, such a diversity is almost inevitable in view of the differences between States with regard to natural conditions, social systems and technological development, which have been referred to above. The OECD provisions reflect these differences by stating that "differing national environmental policies ... are justified by a variety of factors including among other things different pollution assimilative capacities of the environment in its present state, different social objectives and priorities attached to environmental protection and different degrees of industrialization and population density".

At the same time there is a growing awareness that, on a world-wide scale at any rate, full application of the principles of complete freedom of international trade and investment cannot ensure an equitable balance in international economic relations which would grant all States, irrespective of their natural conditions, social systems and technological development, "a place in the sun".
This is in fact what the claim for a new international economic order is all about.

Finally, international environmental law, and once again particularly the shared resources approach, may generate a development of some of the classic tenets of *ius inter potestates*. A case in point seems to be the approach to the "law of the non-navigational uses of international watercourses", advocated in the first report on this topic presented to the International Law Commission. This report envisages the elaboration of a general "framework treaty" to be supplemented by "user agreements" for particular international watercourses. The relationship between the two is described in draft Article 6 in the following terms: "(1) A user agreement shall be entered into within the framework of these Articles. (2) These Articles shall apply to States parties to a user agreement with respect to matters not regulated by the user agreement". It is to be noted that under draft Article 5 a user State not party to the framework treaty may be a party to a user agreement provided that one or more user States parties to the user agreement are parties to that framework treaty. It is clear that under this system a user State not party to the framework treaty would nevertheless be bound by its provision by the mere fact of concluding a user agreement with a State which is a party to that framework treaty. In other words, if this system is adopted there will be created a "halfway house" between Art. 34 of the Vienna Convention on the Law of Treaties, which states that "a treaty does not create either obligations or rights for a third State without its consent" and Art. 38 of the same Convention, envisaging "a rule set forth in a treaty ... becoming binding upon a third State as a customary rule of international law, recognized as such". Surely such a new institution could be justified in terms of the idea that international watercourses are resources shared by the user States!

**Summary**

The environment is clearly an area of direct, inevitable contacts between the territorial elements of national States.

As such its use and protection are a matter of international concern.

The *classic* approach of international law tends to seek to deal with the factual situations by determining the rights and duties of States. Principle 21 of the Stockholm Declaration is the simplest expression of this and the OECD rules dealing with "transfrontier pollution" (an act of one State causing damage to another State) follow generally the same line.

Another approach (to a certain extent similar to that applied of old to the seas) tends instead to create an international substratum not subject to the territorial division between States.

This is the legal approach common to both the "common heritage of mankind" and "shared resources" concepts.

This approach is bound to affect both the rules and practices of States as far as their intergovernmental relations are concerned (*ius inter potestates*) and the
practices and rules relating to human movement across frontiers (*ius communicatio*onis).

A survey of recent international instruments in the field of environmental protection reveals that the two different approaches may arrive at similar results at the *ius inter potestates* level (notification, consultation, dispute settlement, institutional arrangements). On the other hand, the impact of environmental protection at the level of *ius communicationis* (free human movement across frontiers, including "transfrontier" use of resources) appears negatively in terms of a tendency to limit this freedom, and positively in the requirement of an equitable distribution of uses (somewhat akin to the quest for a new international economic order).

Finally, in the absence of a common authority to determine *in concrete* permissible and prohibited uses, and in the absence of a common standard of environmental protection, both approaches lead to the adoption of a system whereby national standards are applied on a non-discriminatory basis and there is equal access to national decision-making procedures in this field.

In the final analysis, the classic approach cannot avoid coming to grips with the solidarity imposed by natural conditions, nor can the common heritage and shared resources approach fail to take into account the differences between States with respect to natural resources, technology and social system.
Footnotes

1 The full text of Article 19 reads as follows: "International crimes and international delicts:
1. An act of a State which constitutes a breach of an international obligation is an internationally wrongful act, regardless of the subject-matter of the obligation breached.
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 recognized as a crime by that community as a whole, constitutes an international crime.
3. Subject to paragraph 2, and on the basis of the rules of international law in force, an international crime may result, inter alia, from:
   (a) a serious breach of an international obligation of essential importance for the maintenance of international peace and security, such as that prohibiting aggression;
   (b) a serious breach of an international obligation of essential importance for safeguarding the right of self-determination of peoples, such as that prohibiting the establishment or maintenance by force of colonial domination;
   (c) a serious breach on a widespread scale of an international obligation of essential importance for safeguarding the human being, such as those prohibiting slavery, genocide and apartheid.
   (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.
4. Any internationally wrongful act which is not an international crime in accordance with paragraph 2 constitutes an international delict".

3 This impression is confirmed by the following Principle 22: "States shall co-operate to develop further the international law regarding liability and compensation for the victims of pollution and other environmental damage caused by activities within the jurisdiction or control of such States to areas beyond their jurisdiction".
4 Reports of International Arbitral Awards, Vol. III, pp. 1907 et seq.
5 This statement provided the basis inter alia for the judgment of the Rotterdam Court in the "Reinwater" case (8.1.1979), Nederlandse Jurisprudentie 1979 no. 113.
6 A careful analysis of these decisions in the light of the terms of the special agreement under which they were made hardly supports the sweeping conclusions often drawn from them in literature concerning general international law relating to the environment. Indeed in its first decision (loc. cit., n. 4 at p. 1932) the Tribunal found it ".... unnecessary to decide whether the facts proven did or did not constitute an infringement or violation of sovereignty of the United States under international law independently of the Convention (i.e. the special agreement) ....". In its second decision the tribunal took great care to base its conclusion on the desire expressed by the States parties to the dispute in the special agreement itself ".... to reach a solution just to all parties concerned" (loc. cit., n. 4 at p. 1963 and p. 1965).
Furthermore the tribunal drew attention to ".... the relativity of the rule" (at p. 1963) and in this connection cited with apparent approval a judgment of the Federal Court of Switzerland which, in fact, rather endorses a rule of non-discrimination (in the sense discussed below in this article)!

7 Compare the terms of the famous Art. 108 of the Final Act of the Congress of Vienna (June 9, 1815; text inter alia in: Fleischmann, Völkerrechtsquellen, p. 15): "Les puissances dont les états sont séparés ou traversés par une même riviere navigable...".

8 Article 11 of the "Agreement Governing the Activities of States on the Moon and other Celestial Bodies" adopted by UN General Seembly Resolution A/RES/34/68, Dec. 5, 1979, declares the moon and other celestial bodies within the solar system, and their natural resources to be "the common heritage of mankind". The meaning of this declaration is clarified in para. 5 of the same Article as being an undertaking by the States parties to the Agreement to establish an international regime to govern the exploitation of the natural resources "as such exploitation is about to become feasible".
By Art. 11 para. 7 (d), one of the main purposes of the regime is to be "an equitable sharing by all States parties in the benefits derived from those resources ...". It is to be noted that under Art. 11 para. 7 (a) another primary purpose is "the orderly and safe development of the natural resources ..." and that Art. 7 of the same Agreement obliges the States, in exploring and using the moon, to "take measures to prevent the disruption of the existing balance of its environment ..." as well as "... measures to avoid harmfully affecting the environment of the earth ...". Similar "shared resources" ideas have recently been put forward by several States for the geo-stationary orbit in outer space, in particular in order to ensure that present uses of that orbit (by some technologically advanced States) do not prejudice future uses (by other States).

In fact Part Four of the second decision of the tribunal in the Trail Smelter Arbitration loc. cit., n. 4, pp. 1966 et seq. describes in detail a regime to be adopted and maintained by the Trail Smelter in the future, "in order to prevent the occurrence of sulphur dioxide in the atmosphere in amounts, both as to concentration, duration and frequency capable of causing damage in the State of Washington ...".

The same "inequalities" influence developments in the international regulation of human movement (international trade etc.); this is what the quest for a new international economic order is all about!

The UNEP Principles had not been finally discussed and voted upon in the Plenary of the G.A. The 2nd Committee of the G.A., however, had adopted resolution A/C.2/34/L.24/Rev. 2, the operative part of which, as amended, reads as follows:

"1. Takes note with appreciation of the report of the Intergovernmental Group of Experts established under Governing Council decision 6/14 in conformity with Assembly resolution 3129 (XXVIII);
2. Takes note of the draft principles of conduct in the field of the environment for the guidance of States in the conservation and harmonious utilization of natural resources shared by two or more States;
3. Requests States Members of the United Nations to respect the principles in their inter-State relations;
4. Requests the Governing Council of the United Nations Environment Programme to encourage the elaboration and application of the principles in the formulation of bilateral or multilateral conventions regarding natural resources shared by two or more States;
5. Also requests the Governing Council of the United Nations Environment Programme and the International Law Commission to consider the provision of a study on the definition of shared natural resources;
6. Further requests the Governing Council of the United Nations Environment Programme and the International Law Commission to report to the General Assembly at its thirty-sixth session, through the Economic and Social Council, on the progress made in
implementation of the present resolution."

Note in particular the request for a definition of "shared natural resources".

14 See para. 16 of the Report mentioned in note 11 supra.

15 The question arises, however, whether "the present state of the art" permits a sufficiently clear determination of the periphery of the shared resource (by which States a resource is shared).

16 So does the view of the expert from Romania, according to which, with respect to the word "shared", "... its interpretation ... excludes all possibility of prejudice to the sovereign rights of States over their national resources located within their frontiers, and also in respect to their right to utilize and conserve those resources".

17 See the recent Report of the International Law Commission on the work of its thirty-first session (1979), pp. 443 et seq., in particular pp. 455 et seq. The choice here is one between (a) "successive and contiguous international rivers, lakes and canals"; (b) "the foregoing plus their tributaries, including those found wholly within the territory of one State, i.e. the river system"; and (c) "the foregoing plus groundwater, i.e. the drainage basin" (ibid, at p. 456).

18 To date two meetings have taken place, in 1978 and 1979. The documents relating to the work of this group are distributed as UNEP documents and marked WMO/UNEP/WG26/....

19 At the second meeting, however, when a significantly larger number of States were represented, this principle was dropped and replaced by a preambular paragraph "recognizing that the atmosphere is a natural resource of the Earth" (sic).

20 For a brief description of the hydrologic cycle see doc. A/CN.4/320 pp. 6-12 and UN doc. ST/ESA/5, "Management of International Water Resources: Institutional and Legal Aspects" pp. 10 et seq. It is to be noted that the last-mentioned publication states (at p. 10) that "the basin concept ... is not adequate to encompass the atmospheric portion of the hydrologic cycle".

21 See the Report of Professor Ray Jay Davis (doc. WMO/UNEP/WG26/7) pp. 3-6.

22 See doc. WMO/UNEP/WG26/5.

23 On the other hand, the comments of the Netherlands seem to deplore the exclusion of "inadvertent weather modification" and in this connection note that "such projects as blocking the Straits of Florida or the Bering Straits are presently technically feasible and would most probably cause permanent climatic changes". During the second meeting the scope of the principles was deliberately limited by defining the term "weather modification" as: "... any action performed with the intention of producing artificial changes in the properties of the atmosphere for purposes such as increasing, decreasing or redistributing precipitation or cloud coverage, moderating severe storms and tropical cyclones, decreasing or suppressing hail or lightning or dissipating fog".

Thus the WMO/UNEP principles move further away from the shared resource concept!

24 Indeed such willingness seems to be implied by treating transfrontier pollution as the responsibility of the State on whose territory such activities take place, vis a vis another State within whose territory the adverse effects are felt. In fact, the Trail Smelter Arbitration itself (in the passage quoted above) bases State responsibility on the non-existence of a right of a State "... to use or permit the use of its territory ..." and does not identify the victims.

25 The full text of Principle 1 reads as follows: "It is necessary for States to co-operate in the field of the environment concerning the conservation and harmonious utilization of natural resources shared by two or more States. Accordingly, it is necessary that, consistent with the concept of equitable utilization of shared natural resources, States co-operate with a view to controlling, preventing, reducing or eliminating adverse environmental effects which may result from the utilization of such resources. Such co-operation is to take place on an equal footing and taking into account the sovereignty, rights and interests of the States concerned."

26 The inadequacy of "the present state of the art" was heavily relied upon at the WMO/UNEP meetings on legal aspects of weather modification in order to oppose stringent rules on this matter. Thus, during the first meeting, a proposed principle postulating that "States shall not engage in any modification of weather in which the
effects could be large-scale, long-lasting or severe without the consent of all States that could be affected by the programme and that "whenever there is a risk of significant harm to the interests of other States from weather modification the modifying State should have the consent, either explicit or implied of these States before proceeding with the programme", as well as other proposed principles relating to liability and compensation and to emergency situations, were not agreed upon on the ground that "the present state of the art" did not permit their application! During the second meeting the emphasis on this aspect was even greater and the following preambular paragraphs were adopted:

"Desiring further that the provisions set out below should be interpreted in such a way as to promote the improvement of weather modification technology and its beneficial use"...

"Recognizing that the application and further development of the following provisions has to be closely related to the existing state of scientific and technical knowledge in the field of weather modification".

Furthermore, the preamble recalls "the relevant decisions" of the World Meteorological Congresses, including the opinion expressed at the Eighth WMO Congress (May 1979) "... that since the scientific progress in understanding the processes involved in weather modification would inevitably be slow, there was no great urgency in codifying these general principles and guidelines into firm legal regulations"!

On the other hand, it is worth noting that during the first meeting the then Deputy Director of the Environmental Assessment Division of the UNEP Secretariat said (as reported): "... that the dynamic nature of the atmosphere makes it inevitable that weather modification has extra-area effects, and no means have been found to confine the effects of modifying the weather exclusively to those who desire the modification".

All in all one cannot help gaining the impression that invoking "the present state of the art" may easily amount to the same as saying: "As long as you don't know what you are doing, go ahead"!

27 GA Official Records 34th session supplement no. 10 (A/34/10) in para. 131, p. 460).
28 Compare the statement in the ILC report, 1.c.: "It would clearly not be the purpose of drafting general rules on the subject to iron out the natural inequalities in resources between States, or to depreciate the importance of the principle of national sovereignty over natural resources"!
29 As is well known, the so-called "Helsinki Rules on the Uses of the Waters of International Rivers" [International Law Association, Report of the fifty-second conference (1968), at 477], in Chapter II, attempt to indicate factors determining the application of the concept of equitable utilization. Art. VI states that "A use or category of uses is not entitled to any inherent preference over any other use or category of uses". On the other hand, a certain preference for present as over against future uses is contained in Art. VII, mitigated however, by Art. VIII. On the other hand, a separate Chapter (Ch. 3) of these Rules is devoted to "pollution". Nevertheless, Article X of that Chapter makes the substantive duties to prevent and abate pollution subject to the principle of equitable utilization! In this respect, a tendency seems to have developed since then to assimilate "pollution" more with wilful interference with the natural flow itself!
30 Thus, for instance, the "connecting factors" in Art. V (2), under (a): "... the extent of the drainage area in the territory of each basin State", and under (b): "... the contribution of water by each basin State".
31 The full text of the Principle reads as follows:

"1. States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.
2. The principles set forth in paragraph 1, as well as the other principles contained in this document, apply to shared natural resources.
3. Accordingly, it is necessary for each State to avoid to the maximum extent possible and to reduce to the minimum extent possible the adverse environmental effects
beyond its jurisdiction of the utilization of a shared natural resource so as to protect the environment, in particular when such utilization might:
(a) cause damage to the environment which could have repercussions on the utilization of the resource by another sharing State;
(b) threaten the conservation of a shared renewable resource;
(c) endanger the health of the population of another State.
Without prejudice to the generality of the above principle, it should be interpreted, taking into account, where appropriate, the practical capabilities of States sharing the natural resource.

In itself, the term "environment of a State" is hardly compatible with the notion of the indivisibility of the environment, making it a shared resource.

One could compare this internalization duty with the duty laid down in both the "old" law of the sea (the Geneva Convention of 1958 concerning the high seas, Art. 2) and the "new" law of the sea (as reflected in the Informal Composite Negotiating Text (Revision 1, of the Third UN Conference on the Law of the Sea, document A/CONF. 62/WP.10/Rev. 1, Art. 87, para. 2)) to exercise the freedoms of the high seas "with due consideration for the interests of other States in their exercise of the freedom of the high seas...".

Although at the first meeting a Principle VI was adopted, which reads: "States shall take all reasonable steps to ensure that weather modification activities under their jurisdiction or control do not cause adverse environmental effects in areas outside their national jurisdiction", this principle was watered down still further at the second meeting so that it reads: "weather modification activities should be conducted in a manner designed to ensure that they do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction".

"Pending the definition of such concerted long-term policies countries should, individually and jointly, take all appropriate measures to prevent and control transfrontier pollution, and harmonize as far as possible their relevant policies. Countries should endeavour to prevent any increase in transfrontier pollution, including that stemming from new or additional substances and activities, and to reduce, and as far as possible eliminate any transfrontier pollution existing between them within time limits to be specified".


Compare the decision of the Court of Justice of the European Communities Court in the "Reinwater" case (case 21/76; Reports 1976, 1735 et seq., at 1748).

For a discussion of these questions, see Rest: Convention on Compensation for Transfrontier Environmental Injuries, Draft with explanatory notes; (Beiträge zur Umweltgestaltung, Heft A 53, 1976) particularly the comments on Articles 19 and 25.

States should gather and record technical and scientific information on weather modification activities. They should ensure that such information is made available to WMO which should continue to prepare and distribute appropriate reports on weather modification activities.

"States should ensure that an assessment is made of the environmental consequences of prospective weather modification activities under their jurisdiction or control which are likely to have an effect on areas outside their national jurisdiction, and, either directly or through WMO, make the results of such an assessment available to all concerned States".

"States should, either directly or through WMO, and to the extent possible, give adequate and timely notification to all concerned States of prospective weather modification activities under their jurisdiction or control, which are likely to have an effect on areas within the national jurisdiction of such concerned States."
A State under whose jurisdiction or control weather modification activities are planned or are taking place which are likely to have an effect on areas outside its national jurisdiction should, upon the request of a concerned State, either directly or through WMO, enter into timely consultation concerning such activities.

Duties to collect and exchange data are also already provided for in the first set of 10 articles on the law of non-navigational uses of international watercourses, presented by the Special Rapporteur to the ILC (A/CN9/320 at p. 3).

Recommendation C(77)28, cited in n. 38, Annex, Title A, para. 3 under (c).

The "philosophy" underlying this principle is formulated in the "Guiding Principles concerning International Economic Aspects of Environmental Policies" (1972; loc. cit., n. 12, at p. 29) as follows: "Cost allocation: the Polluter Pays Principle: Environmental resources are in general limited and their use in production and consumption activities may lead to their deterioration. When the cost of this deterioration is not adequately taken into account in the price system, the market fails to reflect the scarcity of such resources both at the national and international levels. Public measures are thus necessary to reduce pollution and to reach a better allocation of resources by ensuring that prices of goods depending on the quality and/or quantity of environmental resources reflect more closely their relative scarcity and that economic agents concerned react accordingly."


One might compare the relationship between international environmental law and regulation of international trade and investments with the pollution prevention and control measures envisaged at the Third UN Law of the Sea Conference, in particular those Articles which, although permitting national measures by coastal States in various sea areas adjacent to their coasts, prohibit measures which deal with "the design, construction, manning or equipment of foreign ships, unless they are giving effect to generally accepted international rules or standards". Compare the present author's article "La navigation dans le nouveau droit de la mer" to be published in RGDIP 1980.

"Guiding Principles etc.", para. 6.

International Liability for Transfrontier Pollution
by P.M. Dupuy

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   5. Liability insurance to cover compensation for accidental damage

Urgent environmental problems and catastrophic accidents like the recent one caused by the "Amoco Cadiz" along the French coast, have placed a great burden on international law to provide adequate compensation for specific damages, often ignored by the traditional rules of liability. The United Nations' Stockholm Conference on the Environment has elevated this demand to a global level. New technological and industrial activities taking place under the jurisdiction of States may have not only local and regional consequences but also injure the "commons", like for instance the high seas.
In a great number of instances, however, the action immediately involved will be that of private persons. The State's role, if any, will consist merely of some inaction. Thus, it can be seen that the actors as well as the victims of international pollution can raise new problems for international law. This paper deals mainly with public liability and compensation given by States for damages caused by transfrontier pollution. This area involves, in the terminology of Professor Ago's Reports to the International Law Commission on State Liability, "secondary rules" of international law, since they are the consequences of "primary rules", which are international obligations of prevention. It is evident that it would be very difficult to study the duty to compensate (liability), without analysing at the same time the correlative "responsibilities" arising out of the violation upon which it depends.

This distinction between "responsibility" and "liability", i.e. between the obligation to prevent and the obligation to compensate for the damages caused by lack of prevention, must always be kept clearly in mind, as it is formulated in principles 21 (for responsibility) and 22 (for liability) of the Stockholm Declaration on the Human Environment, even if it introduces a much simpler relation between these two terms in international law than in common law.

Having emphasized this distinction, one can recall that international liability is the obligation of a State guilty of an unlawful act which has caused damage to another State to make good such damage.

In order to know whether an accused State is liable, one must therefore first find out what commitments that State has previously assumed. It is true that the origin of the obligation resting on the State does not have any influence on the regime of liability. Nevertheless, in cases of transfrontier pollution it is essential to distinguish between situations in which the polluting State was legally obligated to the polluted State by an agreement prohibiting pollution or providing for its prevention, and situations in which the two States had no contractual obligations toward one another in the matter. This is of importance in order to determine the precise content of the State's responsibility, of which, as it will be seen, customary law only gives a rough definition. This is the reason why a brief reference will be made to the evolution of obligations formulated by treaties (I) before dealing more systematically with custom (II) and with anticipated development in this field.

I. International Liability for Transfrontier Pollution in Case of a Breach of a Treaty Obligation

The effect of the law of treaties varies considerably depending on the scope of intervention and the sources of pollution, as well as on the number of parties to the agreement concerned. One cannot attempt to deal fully with the subject here, but a very brief account will be given in general terms of the situation, in particular as it affects the pollution of rivers and the sea.

There is no general convention concerning all rivers and offering a general solution for all cases. This is because the special hydrological, economic, population features of each river basin considered have given rise to a wide range
of contractual arrangements concerning international rivers, although these arrangements can yield some guidance of a general nature.\(^4\)

The situation is more complex in the case of transfrontier pollution of marine origin. Apart from the rules of customary law codified and developed in the Geneva Conventions of 1958 and 1960, several conventions for the prevention and compensation of damage from pollution have recently blossomed forth. In addition, the Third Conference of the United Nations on the Law of the Sea has already influenced, through its deliberations, the practice of States.

One must recognize that States are actually trying to make their obligations more precise in regard to the prevention of international pollution damages, by adding to the generally broad terms of their treaties new technical annexes, which give an objective and very clear content to the obligations subscribed to.

Certainly, the best example of this trend is given by what is still actually a project, not even signed by the interested countries: the text negotiated between Member Countries of the Council of Europe relating to the protection of fresh waters against pollution (1974). This project defines, notably, very precise water quality norms. It has inspired the formulation of two Conventions concluded in Bonn (December 1976) about pollution caused by chemical substances and chlorides, where technical annexes play a very important role in defining very narrowly the obligations of Parties.\(^5\) The influence of these reglementary conventions on the law of international liability will be examined later in this paper.

This new tendency toward the use of technical annexes had already been revealed two or three years before the above mentioned treaties, by other conventions, dealing with protection of the sea against pollution.

One can, in particular, refer to the Oslo and Paris conventions, which were signed in 1972 and are actually in force. They have respectively regional and world-wide coverage; their purpose is to prohibit States from discharging the most dangerously toxic wastes and to control strictly the discharge of other pollutants. Their annexes introduce a system of "black lists" which give the names of all substances which it is strictly forbidden to discharge. This system is also included in the Paris Convention for the Prevention of Marine Pollution from Land-Based Sources.

The actual Informal Composite Negotiating Text which is being negotiated inside the U.N. Third Conference on the Law of the Sea contains in its Parts V and XII detailed dispositions about the rights and duties of coastal and flag States to prevent and combat pollution of the sea, particularly in the exclusive economic zone. These provisions are deeply influenced by this new generation of conventions.

Nonetheless, although progress has been made in the way of defining more precisely the obligations of the States, their responsibilities remain balanced by their sovereign territorial rights which most States define in very broad terms. Technical conventions are still too rare and have often only a regional application.
In the absence of an agreement stipulating that the signatory countries must limit transfrontier pollution to an "acceptable" level, which would presuppose the availability of strict scientific data, one may accordingly conclude that it is still at present difficult to invoke international liability in cases of transfrontier pollution, even when such pollution results from a breach of a contractual obligation, if this obligation remains formulated in general and broad terms, which is still too often the case. In practice, everything will depend on the wording of the clauses, each State's means of checking the other's pollution and the state of relations between the two countries concerned.

One might then be tempted to conclude that a fortiori it will be all the more difficult to invoke the international liability of a State for transfrontier pollution in the absence of any express and precise contractual provision. That, however, would be to ignore the customary obligations binding on all States in the international community. To be sure, these customary obligations suffer even more from the overly general content already noted in the contractual clauses which States have usually signed so far, but the rules of customary law are still of considerable importance. Even if it would be difficult to invoke them in their present form in the event of an action for liability for frontier pollution, they make it clear that transfrontier pollution is an illegal act in the contemplation of international law.

II. International Liability for Transfrontier Pollution in Case of a Breach of an Obligation under Customary Law

Writers and international practice have suggested several formulae for a general rule whereby all transfrontier pollution would be prohibited by international law. Without attaching too much importance to doctrinal discussions, one should first try to find out which of these formulae in practice find most favour with the States concerned. It will be found that underlying the various formulae there is certainly a principle which definitely reflects customary law, namely the principle whereby every State is forbidden to allow its territory to be used in a way prejudicial to the rights of other States.

This principle, which many people tend to interpret, no doubt too narrowly, as the "good neighbour" principle, will be referred to in the present report as the "principle of the harmless use of territory".

This has led to a statement of cognate principles applying it specifically to certain environments, including the sea and rivers, which are particularly threatened by transfrontier pollution; these will have to be discussed.

In addition, it has been reformulated and extended by Principle 21 of the Stockholm Declaration whose full implications must be examined. It should never be forgotten, however, that as reflected in the current behaviour of States, the various interpretations given to the principle have so far had but little effect on the law and a fortiori on the acceptance of international liability for transfrontier pollution.
(a) Good neighbourliness and the principle of the harmless use of territory

In jurisprudence there have been several precedents, usually in federal relations, but also often in purely international relations, which reveal the existence of an international obligation to avoid doing damage when making use of one's territory.

Reference is sometimes made to the solutions adopted in lawsuits between certain states of the United States, as in the case between Wyoming and Colorado in which the Supreme Court denied to the upstream state the right to divert the waters of a common river or use them as it pleased without regard for the damage it might thereby cause outside its own territory. Likewise, in a case between India and Pakistan concerning diversion of the waters of the Indus, the IBRD, which had been asked to mediate, proposed a solution based on the principle that "the water resources of the Indus basin must be exploited jointly and used in the way which best promotes the economic development of the basin considered as a whole", and also held that neither party might take action likely to damage the interests of the other party.

However, it is more often the Trail Smelter Case which attracts the attention of commentators. In this case the court of arbitration which was set up in agreement with the two parties, i.e. the United States and Canada, ruled that "no State has the right to use its territory, or to allow its territory to be used, in such a way that smoke causes damage to the territory of another neighbouring State or to the property of persons in such territory, if the consequences are serious and if the damage is proven by clear and convincing evidence".

Confirmation of this ruling may be found in the attitude taken by the International Court of Justice in the Corfu Channel Case, regarding which it proclaimed "the obligation of every State not to allow its territory to be used for acts contrary to the rights of other States".

It would be a mistake, however, to think that the principle could be applied only to relations between neighbouring States and not in a wider geographical context. This question is of definite importance in view of the behaviour of certain kinds of transfrontier pollution; for example, air pollution caused by some gaseous substances often reaches places very far from the place where the toxic emissions originated.

Nevertheless, one could normally impose the above obligation in such situations, since the rule regarding the harmless use of territory can quite well dispense with arguments based on actual contiguity and since the rule is a natural corollary of a sovereign State's exclusive jurisdiction over its territory, which thus guarantees in principle against possible violation.

(b) The specific implications of the principle of the harmless use of territory

As has already been noted in connection with the case of the Indus waters, the above principle naturally causes States affected by transfrontier pollution (in particular the neighbouring States) to put a more constructive interpretation on the duty not to make harmful use of one's territory. This duty must, or should
logically, encourage States to co-operate in various ways in order to forestall situations which might expose them to a breach of a rule of customary law, and proof of this desire to co-operate can no doubt be found in the current growth of international co-operation (within organizations such as the OECD or in the form of bilateral and multilateral agreements). There is, however, a more practical way in which the principle of the harmless use of territory has led to framing new and more specific rules.

This trend is seen most clearly in the law on watercourses. For 15 years a new concept, the concept of the "river basin unit" or "international drainage basin", has been appearing in many agreements, especially agreements concerning the management of some of the great rivers in Africa and Asia. This concept involves making the optimum use not only of the river concerned, but also of all the watercourses in the same water basin, and the States concerned are not only bound by certain prohibitions, but are also committed to co-operating with one another.

Behind the initiative in making these agreements may be seen a trend towards attaching more importance to a water basin's physical, economic and social characteristics than to how it is divided up between different territories. This is in line with the now famous resolution of the International Law Association voted at its meeting in Helsinki, to the effect that "... uses of the waters by a basin State that cause pollution resulting in injury in a co-basin State must be considered from the overall perspective of what constitutes an equitable utilisation".

With regard to pollution of the sea, it would seem that the important "Declaration of Principles Governing the Sea-Bed and the Ocean Floor, and the Subsoil Thereof, beyond the Limits of National Jurisdiction" started a trend towards certain forms of joint management, not only for the seabed, but also for areas of surface water. The new developments in the actual Informal Composite Negotiating Text at the Third Conference of the Law of the Sea confirm the orientation in favour of joint as well as complementary responsibilities of coastal and flag States to prevent pollution, mainly in the economic zone, where the role of the riparian country is gaining greater acceptance. However, while the detailed arrangements for such co-operation, which is supposed to exclude the privative use of water by one State at the expense of the others, at least show that governments' commitments are moving in a more positive direction, they are still loose.

(c) Significance of the above general principles for the law on international liability for transfrontier pollution

As already stated, the long-standing proclamation of the principle of the harmless use of territory, assisted by its constructive extension through international co-operation, has been useful in pointing out that transfrontier pollution should be regarded as an infringement of international law. However, although the principle is often invoked at international conferences and as a result is included in clauses in bilateral and multilateral treaties, one must repeat that it is of little weight in legal proceedings.
However, current developments in the policies of governments towards the environment as expressed in the principle stated in Stockholm give reason to believe that the principles are making headway. Thus it appears appropriate to examine their significance for the rules of international liability.

From a theoretical point of view, the obligations to use territory harmlessly and for neighbouring States to co-operate leads to the prohibition of all transfrontier pollution; but it is clear that such a prohibition could not in practice be considered as absolute. Moreover, international law does not set out to preserve the full territorial integrity of every State. Thus there will always be some residual transfrontier pollution which may be regarded as lawful.

To be more precise, the above obligations are what are commonly called obligations of "due diligence" which means that they oblige States to take all necessary steps to prevent substantial pollution.

One must recall that in general international law, the use of the concept of "due diligence" concerns unlawful omissions by a State, since this makes it possible to measure the extent to which the passive, or insufficiently active behaviour of a State, in a given circumstance, falls short of the obligation "to act" imposed on it by the rules of international law in the same circumstance. Due diligence, a concept developed by international case law at the end of the 19th Century, and itself based on the common law, is the diligence to be expected from a "good government", i.e. from a government mindful of its international obligations.

The obligations "to act" with which we are concerned here nearly all flow from territorial sovereignty, of which they are the inevitable consequence. This is, indeed, how it was stated by the arbitrator Max Huber in the Island of Palmas Case:

"Territorial sovereignty involves the exclusive right to display the activities of a State. This right has as corollary a duty: the obligation to protect within the territory the rights of other States, in particular their right to integrity and inviolability in peace and in war, together with the rights which each State may claim for its nationals in foreign territory."

From this rule it can be deduced that any failure to fulfill this general obligation of vigilance which causes damage to the persons or goods of foreigners, either in or originating from a territory, entails liability on the part of the State which controls that territory.

It is, however, clear that an obligation formulated in such general terms cannot be understood in an unqualified manner, without leading towards a general presumption of State liability which has so far never formed part of positive law.

International law only requires States to exercise "sufficient diligence" or "due diligence". This is the measure of international responsibility. The place of the concept of diligence in the law of liability can thus be fairly precisely defined. It is both the counterpart to the exclusive exercise of territorial jurisdiction and
the limiting factor on international liability flowing from failure to act in accordance with it.

Inside the OECD Environment Committee (Group on Transfrontier Pollution), the question has been discussed thoroughly whether this notion of "due diligence" was adapted to the evaluation of States’ responsibility to protect the environment. After having at first adopted without difficulty this possibility, two groups of member States of the OECD expressed, afterwards, serious reservations: the first group criticized the possibility to refer to diligence in this context, claiming instead a general principle of strict liability for environment damages. We deal later on in this paper with the pertinence of this position.

Let us discuss here the second position which was defended by certain States that recognize neither a principle of strict liability nor the possibility of invoking the concept of "due diligence" in international environmental law. For this second category of countries, the main source of obligations in this field is to be found in treaty law. General international law would contain a limited number of applicable principles, like the one of "harmless use of territory". The concept of "due diligence", however, could not be utilized to evaluate whether States had failed to protect effectively the environment because it has mainly been applied by court and arbitration awards in the field of State responsibility to protect aliens.

This position certainly has its political reasons. But it does not correspond to the reality of international law. As it will be explained later on in this paper, the very famous Trail Smelter arbitration provides one example where this very notion of "due diligence" played an important role. And to take a recent example, although the French Government (in its "White Book" published to answer the Australian arguments before the ICJ asking for conservatory measures) did not refer expressly to the term "diligence", it did intend anyway to demonstrate that in its nuclear tests, it had taken all reasonable measures to prevent any significant damage by radiation to other countries, or to the "commons".

In its draft relating to principles applicable for utilization of shared natural resources, UNEP’s Governing Council adopted in 1978 a position which confirms that the basis of international liability for environmental damages still remains the commission of a wrongful act, i.e., non-compliance with the principle of harmless use of territory as it is stated in Principle 21 of the U.N. Stockholm Declaration (see infra).

In accordance with the general principles, States may reasonably be expected to introduce domestic legislation and controls, including sanctions which act as effective deterrents to offenders, based on technical and administrative checks on the use of air and water and arrangements for notifying adjacent countries of serious accidents.

Such action taken inside a country’s frontiers should also take account of the standards and criteria laid down internationally, e.g. by international organizations. Thus, in the present state of the law, it is mainly by proving that the polluting State has failed to take the steps normally required of a "good
government" that the polluted State could succeed in bringing into play the defendant's international liability (particularly when there is no specific agreement between the two States covering pollution).

On the other hand, if a State was faced with this accusation and succeeded in proving that the transfrontier pollution was caused by a completely unforeseeable event, in particular a natural accident, and therefore independent of its will and beyond its control, it could thereby avoid all liability²².

One particular difficulty, however, may arise in connection with transfrontier pollution, namely that very often the pollution is caused by the action, not of State authorities, but of private persons such as industrial enterprises. In such cases it has to be established whether the private person's action completely eluded the controls which the State authorities might be expected to maintain, or whether on the contrary, those authorities maintained insufficient control of the polluting activity (or whether the country's legislation was unsuitable)²³.

A State cannot be held a priori to be liable for the misbehaviour of all private persons in its territory. In other words, a State does not have the duty of providing an international guarantee against any damage caused by persons under its jurisdiction. It is obliged only to ensure that its government functions properly in accordance with the international obligations which it has assumed or which are imposed on it by international custom.

The present trend in international co-operation does not point to any substantial change in the above situation. However, the closer co-operation now achieved is not without significance, since it is leading to the conclusion of more specific agreements (even if they are framed to deal with particular situations) and enables international organizations to define more strictly the duties of States. Thus, international action to control pollution now calls for a less evasive definition of the standard of behaviour which States are entitled to require of one another. It is a trend, however, which can only be gradual and of limited extent.

Nevertheless, many people tend to consider that the solemn statement of certain principles, and especially Principle 21 of the Stockholm Declaration, marks a new development in the law on international liability for transfrontier pollution, and this is a point which must now be discussed.

**(d) The importance of Principle 21 of the Stockholm Declaration on the Human Environment**

Principle 21 of the Stockholm Declaration states that

> "States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction".

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It will, of course, be some years before the effect of this provision on the law of liability for pollution can be fully assessed. Formally speaking, the Principle has at present no compelling legal effect on States and is at most a guideline for subsequent application of the law, although its significance should not be underestimated. As at present stated, and in view of the forum in which it was laid down (the United Nations Conference on the Human Environment), Principle 21 both confirms and adds to the existing body of law.

(i) Confirmation of the existing law

The Principle expressly refers to the United Nations Charter and to the principles of international law which we have already mentioned. The most important of these is the principle of good neighbourliness which is more properly expressed in its broader form as the rule of the harmless use of territory, which means that co-operation between States must be developed for preventive purposes.

The reference to the United Nations Charter has the effect of strengthening this allegiance to the general principles and means that States, in their mutual relations, must abstain from the use of force or any other method, such as deliberate massive pollution of neighbouring territory, which would violate the sovereignty of the polluted country and constitute aggressive behaviour. However, although more than a mere formal provision, the reference to the Charter hardly adds anything new.

Confirmation of the existing law is also found in the actual wording of Principle 21, since to say that States "have the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States" is to reaffirm the obligation to take all reasonable steps, an obligation placed on them by the principles mentioned earlier.

Thus Principle 21 of the Stockholm Declaration invites States to exercise all the vigilance necessary in their territories to prevent transfrontier pollution, using methods based on the general guidelines already laid down.

(ii) Development of new law

The fact that the existing law is confirmed, however, should not conceal what is new in the Principle and has already aroused wide interest.

The first innovation is that, while the text draws on earlier principles, it no longer speaks of "territory", as does, for example, the International Court of Justice in the Corfu Channel Case mentioned above, but of "environment". This is probably an important step forward and one of the first attempts to secure recognition of the hitherto vague concept of environment as a concept having legal significance, a development which might eventually affect even the content of States' obligations. "Environment" is a much wider concept than the classical concept of "territory" and means that States must in future widen the scope of their administrative controls. Their supervision arrangements must cover not only their territory proper (land and territorial waters), but also their air space and, more generally, all the ecological factors which constitute their "environ-
merit" and interact with the environment of other States, near or distant. While the wording is still rather vague, the trend is nevertheless clear and is to prohibit countries at least from hiding behind an extremely narrow interpretation of the traditional concept of territory.

This leads many people to wonder whether Principle 21, by going further than merely extending the "duties" of States, does not perhaps change the very nature of international liability for transfrontier pollution.

(iii) Principle 21 and the nature of international liability for transfrontier pollution

Following Principle 21, Principle 22 would indeed appear to encourage this interpretation by stating that "States shall co-operate to develop further the international law regarding liability and compensation for the victims of pollution and other environmental damage caused by activities within the jurisdiction or control of such States to areas beyond their jurisdiction".

The combination of these two principles shows clearly that many States desire to change the system of liability now in force and their desire seems justified considering the very limited use made at present of the procedures for invoking the general law of international liability through diplomatic channels.

Next, in order to make it easier for victims, whether public authorities or private persons, to obtain redress, it was proposed that the requirement of showing proof of undue negligence by the polluting State be waived; until then this requirement had been indispensable for establishing liability for transfrontier pollution. Examples of "objective liability" can be found, for instance, in some conventions dealing with nuclear energy, in particular the Paris Convention of July 29, 1960, concluded under the auspices of what is now the OECD.

This is the interpretation which some people wish to put on the provisions of Principle 21 of the Stockholm Declaration. In their opinion the Article would place on States more than the mere duty of watching for and preventing pollution and would oblige them to compensate all victims seriously affected by transfrontier pollution originating from the territory of the State concerned. This interpretation is based mainly on the precedent of the Trail Smelter Case mentioned earlier (United States and Canada).

However, without completely rejecting this view, which is based on a legitimate desire for equity, one has to agree that it does not closely fit the course which the actions of governments seem to be following.

Indeed, liability is called "objective" because it does not depend on an assessment of the behaviour of the accused party (subjective approach), but only on the occurrence of damage (objective approach). The main consideration in such a system is protection of the victim and not the behaviour of the author of the act, and the right to redress is granted virtually automatically.

Now it is this automatic right to redress, so attractive to victims of pollution, which makes many industrial States mistrust the system, and indeed, unless the
level of acceptable pollution is fixed very high, these States are in danger of having to continually pay compensation. In addition, such an automatic right ignores the special geographical situation in certain countries; for example, in the case of one-way pollution of an international river, the upstream State would have to continually pay compensation for the exclusive benefit of the downstream State.

It is obvious that in the long run such situations would have none of the merits of equity which would appear to characterize the system of objective liability at the outset.

Furthermore, no really decisive precedent can be found to support such a system. The Trail Smelter Case is a special one, since scrutiny shows that the Court of Arbitration’s award had been previously accepted by the disputants in the agreement to go to arbitration which they had signed. Moreover, the Court drew on precedents from the Supreme Court of the United States, which do not necessarily constitute a precedent in international law.

Thus, while it may be agreed that this case is a precedent in customary law for the States which were directly concerned, i.e. the United States and Canada (although this also may be contested)\textsuperscript{25}, one cannot argue that it showed the existence of a general rule of international law which allowed the invocation of objective liability for transfrontier pollution and that such a rule was explicitly recognized more than thirty years later by Principle 21 of the Stockholm Declaration.

As was proved by the attitude of several member countries of the Council of Europe (and also of the OECD) during the negotiations on the “draft European convention on the protection of freshwater from pollution”\textsuperscript{26}, there can be no question for the present of invoking this kind of special liability. However, it is certain that Principle 21 of the Stockholm Declaration expresses a general wish, not for this very special kind of liability, or at least not for it to be given such wide currency, but for a revision and simplification of the arrangements for invoking international liability for transfrontier pollution which have so far proved too obstructive. The question to be discussed next is what direction to give to this liability.

III. International Liability for Transfrontier Pollution in Future International Law

It is clear that the following paragraphs, being an attempt to define new perspectives, can do no more than give some general guidelines without predicting future action by States other than by reference to their current behaviour and statements.

International liability as a legal instrument has been regarded so far as being ineffective for obtaining compensation for damage caused by transfrontier pollution, which explains why States usually do not invoke it.
On closer inspection it appears that the main fault with international liability is that it is ill-adapted for obtaining redress for this kind of damage, because it requires the victims to furnish evidence which is often difficult to obtain, especially when they are only private persons. It is also accused of being too formality-ridden because, unless a waiver is obtained, it obliged victims to act through the hazardous and often time-consuming channels of diplomatic protection.

This brief analysis shows that, if the procedures are to be improved for obtaining compensation for damage caused by transfrontier pollution, it will be necessary in the future to relax the requirements as to proof and demystify the procedures for bringing government liability into play at the international level.

These two guidelines concern liability in its true sense, but it would be a mistake to think that compensation must necessarily depend on establishing liability. As is pointed out in document ENV(73)40, “rather than referring to liability, countries could consider a system of charges which would be paid by the polluting States when the pollution level is excessive”. This suggestion seems all the wiser as, whatever changes are made in the arrangements for establishing liability, they will always be regarded by States as an official challenge to the legality of their actions, and therefore they will always have disciplinary or even penal overtones, which is also one of the reasons why States are not keen on them!

The object, after all, is to compensate victims and also in general to keep down the scourge of pollution. To accomplish this one may suggest two main courses of action for States to follow:

a) to revise rules of application of international liability in order to adapt them to the compensation of environmental damages;

b) to use preventive compensation agreements instead of invoking international liability after the event.

**A. To be effective, the principle of liability for transfrontier pollution must be revised**

One must recognize that it would be often dangerous to abolish the possibility of invocation of liability in its traditional sense, since it helps to preserve the force of international law, but one might be able to rationalize its use on the basis of the principles underlying the systems already described.

Without undue theorizing or appealing to futurology, one can draw certain conclusions from the present trend towards co-operation between States which, if systematized, might give international liability a meaningful part to play in controlling transfrontier pollution.

(a) As already explained a State's international liability for transfrontier pollution cannot at present be brought into play unless the State can be shown to have fallen far short of the behaviour which the other States are entitled to expect of it. This means that, unless a State's obligation has been clearly laid
down in a previous treaty, reference must be made to an "average standard" which the judge or international arbitrator will fix on the basis of the practice most commonly followed in inter-State relations.

The tendency today is to base this average standard on technical calculations. If, for example, one looks at the many agreements which are signed nowadays and the research being done by governments and international bodies, one finds that their purpose is no longer to make States accept just a vague, general commitment. More and more use is being made of qualitative and quantitative standards arrived at by studying scientifically how to make the environment in question self-regenerative. In his report on transfrontier pollution of fresh water, Professor C.A. Collard gives some highly significant examples of this trend. And as said before, most recent conventions have technical annexes which lay down the requirements in great detail.

Following this example, many international organizations are trying to lay down quality standards for water and air which may be expected to serve at least as a possible yardstick for judging whether a State's action complies with international standards. This approach can be developed much further, but so far "eco-standards" are too often based on very general data and there are many obstacles to giving them any compulsive force.

Technical standards could, however, be made more detailed and compulsive, if they were designed only for international co-operation in a particular area, based on the above-mentioned principles of community of interest on either side of a frontier. If the relevant agreements were subject to periodic revision, the standards could specify the duties of States in practical terms and if this trend, which is already evident in practical politics, were followed to its logical conclusion, it could yield valuable material for the revision of evidence requirements.

(b) The main drawback to the present system of liability is the difficulty of producing evidence that transfrontier pollution which causes damage to State B originated in the territory of State A, and then proving that the pollution arising in A is caused by undue negligence on the part of A. In effect, a two stage approach is required.

Now it is at these two stages that the evidence requirements could be improved. By a formal agreement the States in a particular area, or even all the OECD Member countries, could agree to institute, in addition to the deterrent compensation procedures already mentioned, a system of presumptions which would make it easier to furnish proof of damage from transfrontier pollution. A practical example can perhaps illustrate how the system would work and what cases it would cover.

In a case of one-way pollution such as an international river, the polluting upstream State and the polluted downstream State would have previously made an agreement to the effect that the chlorine ions content must not exceed three hundred mg/l at the frontier between them, and monitoring systems would have been set up on each side of the frontier by the competent water basin management authorities in each country.
If the authorities in B found that as a result of an accident or oversight the salt content of the water arriving at the frontier had suddenly and substantially exceeded the agreed threshold, the polluted State could argue that there was a presumption that the infringement, once it had been confirmed scientifically, was by itself prima facie evidence of A's failure to exercise the required vigilance. A would then have to stop the polluting emission as soon as possible and would be liable for the damage caused.

However, the polluter's liability could never be regarded as absolute since he would still be entitled to prove either that the source of pollution was in fact situated in the territory of a State C, or that he was unable, for technical reasons, to prevent the accident. Moreover, the various causes of pollution which do not result in liability could be specified in the relevant treaty as desired by the parties to it.

This system, which would mean reversing the onus of proof, would involve nothing unheard of in jurisprudence. On the contrary, the domestic law of OECD Member countries is familiar with it, either as "res ipsa loquitur" of common law, for example, or as the "presumption of fault" in French and German law. Although it has so far been eschewed in inter-State relations, it would make a considerable improvement in positive international law without obliging States to resort to unfamiliar means of redress.

This system differs from earlier systems based on paying compensation in advance or through an institution by admitting exceptions from liability for pollution depending on the causes of pollution. It would come into effect after the occurrence of the damage. The latter feature makes it specially suitable for dealing with damage caused by accidental pollution and it should be a useful addition to preventive techniques.

Another result of admitting such exceptions from liability is that the presumption system differs from the unduly rigid system of objective liability which should normally give automatic redress, but, as already pointed out, it assumes that agreements are concluded providing for modification of the conditions for applying it to suit the situation and interests of the respective States. Meanwhile the door remains open to using the more radical technique of objective liability in certain situations only, so that this extremist system would then be free from the drawbacks which it might have if used more generally.

(c) Invocation of objective liability

Objective liability would appear to provide a most useful basis for remedying accidental damage caused by exceptionally dangerous substances or activities. As is clear from the treaty precedents which have adopted objective liability for use in international relations, this type of liability is designed mainly for remedying unforeseeable damage which, because it is unforeseeable, is not the result of negligence or unlawful action on the part of a State. This means that one cannot invoke the traditional international liability based on proving that a State is guilty of an offence in international law in order to obtain redress. Hitherto objective liability has been invoked in order to provide compensation for damage caused by two kinds of activity involving exceptional risk ("ultra-hazardous
activities"), namely the peaceful use of atomic energy and the exploration of space beyond the earth's atmosphere.

Although for the reasons stated it would seem inappropriate for the environmental law to make extensive use of this special system, situations can be imagined in which a grave threat to the environment in a given area was caused by the use, stockpiling or manufacture of substances where no amount of precautions could entirely eliminate the possibility of a catastrophe in which case the States concerned would set up a system of objective liability for use between themselves.

If the use of objective liability was restricted to certain areas and substances, it could play an effective part in remediying certain types of catastrophic damage caused by transfrontier pollution.

(d) More flexible conditions for invoking diplomatic protection

One can also imagine considerable improvements in the existing system upon which strictly inter-State liability is based. Thus in positive law a third person can only enjoy diplomatic protection, if he first satisfies the following two conditions:

(a) he must be a national of the country whose protection he requests; and
(b) he must have exhausted all the means of redress available in his own country, i.e. he must have exhausted all the means of redress offered by the law of the State against whose action he complains.

There are now some precedents, however, which hold out hope that these two requirements will be relaxed.

With regard to the nationality requirement, the Convention on International Liability for Damage caused by Space Objects is remarkable for having opted in favour of objective liability. This convention has adopted a system whereby a private person who has suffered damage and whose country of nationality has refused to grant him diplomatic protection may be protected by the State in whose territory the damage occurred, or, if the latter State does not espouse the claim, by the State in whose territory he resides. This array of potential protectors naturally provides the victim with additional guarantees which can quite well be applied to liability for transfrontier pollution. With regard to the requirement that all available domestic means of redress must be exhausted, the convention has opted purely and simply for its abolition, which again is a solution worth considering for environmental law.

One might even go further and, leaving behind the system of liability in public international law, allow private persons to sue a polluting State directly before the ordinary courts of a State. Except in the case of the polluting State's own courts, this would mean first giving up the immunity from jurisdiction enjoyed by all sovereign powers in regard to municipal tribunals. There are, however, many precedents for doing so, such as the Convention of November 29, 1969.
drawn up under the auspices of the IMCO to determine the private international liability of shipowners in case of pollution caused by hydrocarbons.

B. Other types of solution avoiding the utilization of the international liability of States

The international liability of States should not be examined in isolation nor within an unduly narrow perspective of public international law. Indeed, in relations between States, international liability often remains a somewhat inappropriate instrument for guaranteeing prompt and equitable compensation for “victims” of transfrontier pollution. It is therefore necessary not only to modify the implementing machinery, but also and above all to provide additional recourse to other legal (and economic) procedures with a view to achieving optimum efficiency with regard to redress.

1. Preventive compensation as a substitute for liability for transfrontier pollution

It is not the purpose of this report to describe in detail the various procedures for preventive compensation which States might use with one another. However, it will be useful to define the terms used to describe the different kinds of compensation. The economic approach to transfrontier pollution generally views liability in a broad sense which does not strictly correspond to its legal interpretation. It should be remembered that in law there is a liability to remedy damage resulting from a breach of international law; thus it is a derived liability which arises only after the damage and for that reason cannot normally be used as a legal instrument for preventing damage.

On the other hand, the arrangements considered here are based on compensation procedures with deterrent effects which would operate either before the damage occurred or at the time of its occurrence, according to a previous agreement between the polluting and polluted States. These procedures would have to be laid down in a treaty instrument, since they can only be worked out by bilateral or multilateral negotiations.

Various systems may be envisaged, the main ones being as follows:

The pollution charge is a proportional instrument applied to the polluter, who pays an amount which increases with the level of pollution and receives an incentive payment which increases with treatment beyond a certain level.

One might also adopt the reverse of this procedure and have a system for levying waste treatment charges, whereby victims of pollution would pay polluters a fee for treating waste at above an agreed level, called the “franchise” (liability threshold), and would be paid a bonus when the waste treatment fell below that level.

Then there is the certificate system whereby certificates are issued to people authorizing them to emit pollutants into a given environment. In practice, this system provides results similar to those obtained by the other two systems.
Whatever system is used, the problem is how to allocate the costs of controlling transfrontier pollution between the various States concerned using a principle of equity whereby the financial and administrative burdens would be distributed between the negotiating States so as to prevent either from having an unfair advantage.

A move towards this approach can already be seen in the co-operation which is developing between certain States. This would consolidate and develop the principles of good neighbourliness which, as already mentioned, have already underlain positive international law, even if international liability is rarely invoked when these principles are infringed.

If States co-operated to prevent transfrontier pollution by jointly working out technical, economic and legal procedures for putting a ceiling on such pollution and by organizing compensation, not as a penalty for infringing the law, but as an offsetting transfer for preserving an economic balance between States, then they would in most cases avoid the necessity of invoking international liability, the latter being dependent on the breach of a pre-existing obligation whose validity in this connection might always be contested. One can refer, for instance, in this context, to the co-operation of riparian States of the Rhine which signed the Bonn Convention on pollution of this river by chlorides (December 1976).

Let it be said in this connection that, despite appearances, the principle generally known as the "polluter pays principle" is not based on the polluter's legal liability which, as already stated, is a secondary, derived and therefore subsequent liability. Instead of involving the question of liability, "the polluter pays principle" is intended rather to act as a deterrent by making the originator of a polluting activity bear the cost of installing waste treatment equipment (or of any other step to abate pollution). The use of this principle, or of the various other arrangements mentioned earlier, would have the advantage of separating compensation from liability by making it part of an inter-State co-operative programme based on common interest in safeguarding the ecology of a given environment.

2. **Better facilities for private persons to obtain a municipal court hearing**

It should be pointed out, however, that by working together States could make substantial improvements in the rules of private international law governing proceedings instituted by private persons who had suffered damage from transfrontier pollution. When such a private person brings an action himself, he could be given the right to a hearing in the courts of the polluting country or of his own country, depending on his place of residence.

In the former case, it is clear that he would be in a disadvantageous location for obtaining redress. He would often be ignorant of the language, law and procedure of the foreign State and have to give security for costs before obtaining a hearing in the court, where he would have difficulty in establishing a chain of causation between the damage suffered and the activity complained of.
In order to improve the victim's situation in such circumstances, States would find it mutually advantageous to grant to foreigners fully equal rights of appearance in their courts and equal treatment with regard to any damage from transfrontier pollution. Under the traditional rules of international law, States are already normally obliged to see that their courts administer justice fairly and behave impartially towards foreigners; failure to meet this obligation constitutes, or might constitute, a denial of due legal process which would involve the State's international liability.

However, some international conventions (such as the OECD (Paris) Convention on Third Party Liability in the Field of Nuclear Energy) contain clauses requesting the Contracting Parties to comply with this general obligation to be impartial, which would suggest that States were naturally inclined to ignore some of its implications.

It therefore seems desirable to take the initiative, as the Member States of the Nordic Council have done in their 1974 Convention on the Protection of the Environment. In addition to providing for various arrangements for the States to consult together, this Convention gives the authorities responsible for environmental policy in one State the right to a hearing in the courts of another contracting State which has been asked to consider a case of damage from transfrontier pollution (Article 4).

When a private person chooses to sue in his own courts, another difficulty might arise because it would not be certain whether a polluter abroad would agree to appear before the court to which the victim had applied. Here again, the situation could be improved by agreements concluded between States, a provision of which should be that a polluter would have to comply with a summons to appear before a court in the victim's country.

The work undertaken mainly by the OECD in recent years concerning non-discrimination and equality of treatment has shown that the development and wider application of equality of treatment between "victims" of domestic pollution and "victims" of transfrontier pollution may, in many cases, make it possible to settle compensation problems directly. If each State had a non-discriminatory environmental policy, whereby every possible effort was made to reduce both transfrontier and domestic pollution, and if each State also ensured that "victims" of both domestic and transfrontier pollution were guaranteed equal access to their administrative or legal procedures, both to prevent pollution and remedy its effects, incidents of transfrontier damage would diminish and compensation could be awarded to "victims" of transfrontier pollution by the courts of the polluting State on the same basis as for a "victim" of domestic pollution. The causes of disputes as between States would then be largely eliminated.

Indeed, where a State practices equality of treatment, the "victims" of transfrontier pollution emanating from that State who brings cases before its courts would be assured of obtaining the same compensation as "victims" of domestic pollution. Thus, having obtained compensation through the domestic legal channels of the State where the pollution originated, "victims" of transfrontier pollution would have no need to ask their own State to exercise the right of
diplomatic protection on their behalf. This solution would be all the more
advantageous in view of the fact that, in any event, the State asked to afford
such diplomatic protection (the polluted State) is never bound by international
law to grant it.

However, it is at once apparent that this is a satisfactory solution for "victims"
of transfrontier pollution only under certain conditions:

(a) First, the damage to be compensated must be specific, i.e. it must be suffi-
ciently limited to be the subject of compensation in an action brought by
the "victim", or a homogeneous group of "victims", in accordance with the
procedures of general law in the courts of the State in which the trans-
frontier pollution originated. On the other hand, if the damage assumes the
dimensions of a catastrophe, it will be necessary to find other solutions that
will require the intervention of the State of which the "victims" of the
transfrontier pollution are nationals (claim for compensation lodged at
diplomatic level).

(b) Secondly, the compensation obtained in the polluting State must be com-
parable in extent and amount to that which the "victim" would have ob-
tained in his own State, otherwise it will be to the "victim's" advantage to
bring the action in his national courts. However, enforcement of the judg-
ment may then perhaps give rise to difficult problems.

In practice, the principle of equality of treatment is of optimum value only
when it applies as between States which have comparable environmental policies
and a legal system based on similar substantive rules (particularly as regards the
extent of damage which can be compensated). However, the principle of
equality of treatment might, by means of treaty provisions, constitute a
minimum that may be required of the polluting State and be incorporated in the
duties of diligence in taking curative action which in any case are binding on
such a State under international law.

3. Concurrent application of two sets of laws

In order to go beyond the principle of equality of treatment and its short-
comings, it is possible to imagine a system where both the law of the "victim"
and the law of the polluter would be applied concurrently, by making a sort of
"mixture" in the best interests of the "victim" so that he does not find himself
in a more unfavourable situation as a "victim" of transfrontier pollution than he
would as a "victim" of domestic pollution originating in the polluted State.

However, in order to achieve a fair balance between the interests of the "victim"
and rights of the polluter, it would also be necessary to ensure that this mixed
system did not result in the punishment of the polluter for the emission of a
level of pollution that would be regarded as permissible under his own law.
"Permissible pollution" is pollution which does not exceed the maximum thresh-
hold allowed by the regulations in force in the polluting State. However, the fact
that this pollution is permissible does not mean that the "victim" will not be
compensated. Thus, authorization to set up a plant emitting pollution may be
granted by French law under certain conditions but always without prejudice to
the rights of third parties. The "victim" of transfrontier pollution might there-
fore be offered the following alternative on an optimal basis:

(a) In cases where the damage is caused by pollution not exceeding the per-
missible limit in the polluting State, the principle of equal treatment may be
adopted purely and simply, i.e. the compensation will be determined in
accordance with the law of the polluter.

(b) Alternatively, in cases where the damage is caused by pollution that is
unlawful (i.e. in excess of the limits allowed) in the polluting State, the
"victim" of transfrontier pollution might then have recourse to his own
national law to determine the compensation for the injury sustained.

This system has the following advantages: From the standpoint of the polluter:
he has the guarantee that damage caused to a "victim" of transfrontier pollution
will not be more severely penalized than damage to a "victim" of domestic
pollution, at any rate insofar as the pollution is kept within the limits allowed in
his State. From the standpoint of the "victim" of transfrontier pollution: he has
the guarantee that the compensation received for damage by transfrontier
pollution will be the same as he would have obtained for equivalent damage
caused by domestic pollution in his own State, at any rate insofar as the damage
sustained by transfrontier pollution is caused by a level of pollution which is
unlawful in the State of the polluter.

The penalty imposed on the polluter for exceeding the permissible level of
pollution will therefore be to compensate the "victims" of transfrontier
pollution in accordance with the scale in force in the "victim's" State in cases
where this scale is more severe. To the extent that this mixed system would be
organized by means of international agreements between the States concerned -
which would be unavoidable in practice - such States could decide which court
would be competent to settle any disputes arising in cases going beyond the
strict application of the principle of equality of treatment. For simplicity's sake,
it would seem advisable to choose the court of the polluting State, even in cases
where the law of the "victim" is to be applied. It is, in fact, a quite common
practice for national courts to apply the law of a foreign State in cases of private
international law.

The same "mixed" system might also be strengthened if, under the conditions
laid down previously, application of the law of the "victim" were to be extended
not only to the determination of the amount of compensation but also to the
rules of evidence or to the definition of compensable damage (indirect or
defered damage, loss of amenity, etc.), insofar as such a development would be
to the "victim's" advantage. Here, too, it must be noted that it would be
necessary to institute such mixed systems of compensation by means of very
specific agreements between the States concerned. A large number of variants
can be found to the suggestions made here, since the aim is not so much to
formulate an inflexible uniform system as to illustrate the possibilities offered
by the combined application of the laws of polluter and "victim".

Instances of international agreements providing for the combination of laws in
this way are still rare but they are quite conceivable, especially in a bilateral
context. An interesting example is the agreement concluded between Germany and Austria on December 19, 1967, for the compensation of individuals living in the vicinity of Salzburg airport, which is very near the German border. The solution adopted is similar to those described above but differs in some respects.

First, the agreement is based on a legal fiction whereby, with respect to the protection of individuals living on the German side of the border in the vicinity of the airport, Germany will act as if the airport were located on German territory, i.e. by taking the measures required in conformity with its own legislation (particularly as regards the creation of safety zones). As regards compensation, if the company managing the airport is required to pay compensation under the German legislation on air traffic and safety or on aircraft noise abatement, the German Government will assume the company’s liability for compensating the victims.

Any litigation resulting from the use of the airport in a way that is detrimental to persons, property or rights situated in Germany will come before the ordinary German courts, which will opt for the application of either German or Austrian law, whichever is more favourable to the "victims". Once the German Government has paid the compensation in lieu of the company managing the airport the Austrian Government will reimburse the German authorities for all relevant expenses and for the amount of compensation paid.

A comparable system of substituting the national authorities of the "victim" for the liable foreign polluter, with the subsequent subrogation of these authorities as successors to the rights of the "victim", is also practiced under the law of some countries, a specific case being the "Fisherman's Assistance and Polluters' Liability Act" in force in the Canadian Province of Manitoba.

4. Offsetting perpetuated injurious effects

Lastly, one other type of solution deserves consideration. It is based largely on socio-economic considerations, although it comes within the context of substitutes for traditional international liability insofar as it also takes as its starting point - like the previous solutions - the principle that there is a sole and identified polluter. This solution might be said to replace compensation for damage occurring in the past by a system "offsetting" the damage which will be perpetuated in the future. The term "offsetting" is here used solely in cases where the damage is perpetuated; it may take the form of a compensatory payment or of mitigation of effects.

There are, indeed, cases where remedying damage of technological and industrial origin gives rise to difficult problems, since the only means of putting a complete stop to the damage would be to terminate the polluting activity, a solution that is sometimes impracticable because it would entail unacceptable economic or social consequences for the community (unemployment, stoppage of essential economic production, etc.). Thus the "victims" in the Trail Smelter Case were compensated on several occasions (1926, 1931 and 1937) because the trans-frontier pollution did not stop.
Thus, the "victims" must accept the fact that the cause of the damage is to be allowed to subsist for a time, but an effort will be made to reduce the injurious effects by providing the "victims" with some form of compensation or mitigation, without however giving them any guarantee that such effects will cease once and for all.

"Offsetting" would be a form of remedying the damage by providing an equivalent value, as it were, corresponding to compensation for the exercise of a public or private right or easement - something akin to the purchase of a "right to pollute". This system would seek to strike a balance between maintaining an activity in the public interest and safeguarding private rights. A very similar solution has already been adopted in the national law of several countries to attenuate the injurious effects suffered by people living near airports (payment for the right to make noise, fitting of soundproofing material, anti-noise screens, etc., without abating the nuisance at its source).

At the international level, the case of the lower Frickthal area is a very clear-cut example of "offsetting" by a specific polluter in favour of identified "victims". Smoke and fumes from an aluminium plant located in Germany pollutes the air of two villages situated in the Canton of Aargau in Switzerland. From 1954 onwards a joint commission tried to provide various solutions and finally resolved the matter as follows: since 1965, the aluminium manufacturer has been paying a total of Sw. Frs. 100,000 to the "victims" each year, while at the same time trying to reduce the disamenity, without entirely eliminating the polluting emissions. It should be noted that the question of which law to apply is here avoided, since the payment is determined by agreement between the parties concerned. However, the system of "offsetting" can never be more than a limited solution, warranted only in very special situations which are doubtless of short duration.

5. Liability insurance to cover compensation for accidental damage

In cases where damage may accidentally assume such proportions that the economic survival of the polluting plant is at stake, it is often found necessary to provide special machinery to ensure that the company's risk is covered and to guarantee full compensation for victims. Such machinery makes provision for payment of compensation in excess of the liable polluter's financial capacity and is sometimes combined with a system of liability derogating from the general law which, in effect, ensures compensation solely by virtue of the fact that damage has occurred.

Such machinery includes normal insurance systems (civil liability of the polluter), mutual schemes (liability for the damage caused by a polluter is shared by a group of polluters in the same sector of activity) or systems of compensation guaranteed by a State or States (cover of exceptional risks out of public funds). Such schemes are questions of international law only if they are established by international treaties (for instance Brussels Convention of December 18, 1971, establishing an international fund for compensation for oil pollution damage). Thus, the study of insurance schemes is left to another paper in this book.
Finally, it should be noted that government responsibilities, i.e. the various obligations incurred by States in respect of transfrontier pollution, are increasing and will certainly continue to increase under the effect of even closer international co-operation and with the approval of the international community as expressed in Principle 21 of the Stockholm Declaration. If, however, it is desired to link the increase in government commitments with more use of the jurisprudence of international liability, three sets of requirements will have to be met.

First, if the machinery is not to seize up and lose its deterrent effect, international liability must not be allowed to merge systematically with compensation for damage; other techniques based on joint preventive action by States could perform this remedial function more effectively, especially in preventing cases of chronic pollution.

Secondly, international law depends on the acceptance of liability, and when this has to be invoked, the procedures for establishing it should be made more flexible by simplifying the evidence requirements and by enabling victims of pollution more easily to obtain full redress.

Third, international liability has its limits. It will remain inadequate in a number of cases, leaving individual victims without any fair compensation. It is thus necessary to not only focus on the possibilities of modifying it, but also to research new ways of prevention as well as new remedies for environmental damages.
Footnotes


3 For the question of damage, as a necessary element for international liability, see G. Handl, "Territorial sovereignty and the problem of transnational pollution", 69 AJIL 1975, 58-76 and article 2 of ILC Draft on State Liability, in which the "objective element" as a condition for the existence of an internationally wrongful act, namely "failure to carry out an international obligation of the State" is considered as sufficient in itself. See our discussion of this point in P.M. Dupuy, "L'Affaire des essais nucléaires français et le contentieux de la responsabilité internationale publique", 20 German Yearbook of International Law 1977, 375-405, 400.

4 Colliard, "Legal aspects of transfrontier pollution of Fresh Water", Legal aspects of transfrontier Pollution, op. cit., n. 2, 263-283.


8 Fischer, "La Banque Internationale pour la Reconstruction et de Développement et l'Utilisation des Eaux de l'Indus" 1960 Annaire français de Droit International 669 et seq.


11 Colliard, op. cit., n. 4.


14 "Les Relations Internationales de Voisinage", op. cit., supra n. 6 with other pertinent references.

15 RIAA Vol. 2, 839.

16 At the Hague Codification Conference in 1930 the French proposal concerning the general principle of liability, adopted unanimously, was as follows: "A State is liable for
any failure, through one of its organs, to fulfill its international obligations, which causes damage to the person or goods of a foreigner within the territory of that State"; League of Nations, Acts of the Codification Conference (hereinafter referred to as "Acts"), p. 26 (translation from original French).

17 See to the same effect, the Strisower Report to the Institute of International Law: 33 Annuaire 1927 I, 455 et seq., 465, proposition there set out is today the accepted opinion of practically all the authorities. The only notable exceptions are Bourquin, "Crimes et délits contre la sûreté des Etats étrangers"; 16 RoC 1927 I, 121 et seq., 223 and the individual opinion of Judge Alvarez in the Corfu Channel Case whereby: "Every State is considered as having known, or as having a duty to have known, of prejudicial acts committed in parts of its territory where local authorities are installed ...". For the case-law, see the Wippermann case (United States/Venezuela); Moore, Arbitrations Vol. 3, 3042.

18 Salmon, "La pollution des fleuves et des lacs et le droit international", Institut de Droit international, 58 Annuaire 1979 I, 193 et seq.


20 P.M. Dupuy, loc. cit., n. 3 and references quoted in that article, 400.

21 An example of the inclusion of this obligation under customary law in a treaty instrument may be found in Article 10 of the final text of the Paris Convention for the Prevention of Land-Based Pollution.

22 The generally accepted causes are an act of God, force majeure, and an act of a third party or of the victim.

23 There would be sufficient reason for invoking the liability of a State if its legislation proved to be at variance with the criteria normally adopted by the other States or if it ignored the standards defined jointly by countries co-operating in international organisations.


25 In other circumstances the United States refused to admit that it had been discharging a liability when it compensated Japanese fishermen injured by radioactive substances produced by nuclear tests in the Pacific. See e.g. Margolis, "The Hydrogen Bomb Tests and the International Law of the Sea", 64 Yale Law Journal 1955, 629-647.

26 Council of Europe, Parliamentary Assembly, Doc. 3417, April 4, 1974. There is still no final agreement on the text of this Convention.


28 In particular, the International Court of Justice has refused to accept this kind of presumption proposed by the United Kingdom in the Corfu Channel Case; UIC Reports 1949, p. 19.

29 In United States law, Section 520 of the Restatement of Torts defines an "ultra-hazardous activity" as an activity ... which necessarily involves a risk ... which cannot be eliminated by the exercise of the utmost care".

30 A State is never obliged, under international law, to grant diplomatic protection.

31 There is, of course, the risk that in practice it may be the same State which plays all these roles. The Convention of International Liability for Damage caused by Space Objects was drafted in the United Nations and came into force in September, 1972; in: 10 ILM 1971,965.


33 Convention on the Protection of the Environment between Denmark, Finland, Norway and Sweden, 13 ILM 1974, pp. 591 et seq. Meanwhile in United States domestic law, the Clean Air Act (42 U.S.C.A. § 1715a) empowers the Administrator of the Environmental Protection Agency to give notification of a claim from a foreign State to the Governor of the (U.S.) State in which an emission originates. When he does so, a
meeting is arranged at which the plaintiff State enjoys the same rights as any of the
United States. This is in fact a hybrid system, half-way between seeking redress in one's
own country and claiming in another State, which is of special interest.

34 Non-discrimination in relation to transfrontier pollution (Paris, OECD, 1978), con-
taining the text of 3 Recommendations of the OECD Council in direct relation with
non-discrimination, and 2 explanatory reports of the Secretariat; Legal aspects of trans-

For comment on OECD Principles, see also:
Seidl-Hohenveldern, "Transfrontier Pollution and Recommendation C(74)224 of the
Council of the OECD", in: Melanges in memoriam Garcia Arias", (Saragossa 1973-74),
pp. 273-85; McCaffrey, "The OECD Principles Concerning Transfrontier Pollution: A
commentary", 1 Env. Pol. Law 1975, 2-7; Stein, "The OECD Guiding Principles on
Transfrontier Pollution", 6 Georgia Journal of International and Comparative Law,
1976, 245-58; Seidl-Hohenveldern, "Alternative approaches to transfrontier environ-
mental injuries", 2 Env. Pol. Law 1976, 6-9; P.M. Dupuy, "The OECD Recom-
menedation C(74)224 on Principles concerning Transfrontier Pollution", 1 Revue

35 Seidl-Hohenveldern, "A propos des Nuisances dues aux aéroports limitrophes. Le cas de
Salzbourg et le traité austro-allemand du 19 décembre 1967", (1973) Annuaire français
de droit international, pp. 890-894.

36 June 17, 1970.

Decree No 73-193 - J.O., Febr. 27, 1973; German Legislation: Federal Law of March 30,

38 Ballenegger, La pollution en droit international (Lausanne, 1975), pp. 224-226.

39 The Seveso incident (Italy) is a case where the operator may be incapable of meeting its
financial liability for pollution. Only the non-compulsory intervention of parent com-
panies offers any likelihood of the "victims" (individuals and the State) receiving com-
pensation or damages (probably in excess of Frs. 100 million). A parent company has
already paid Frs. 12 million, (2 billion lire), but there is talk of limiting these payments

40 See Lummert, p. 250.
Transfrontier Environmental Management

by Michael Bothe

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I. Introduction

Transfrontier pollution cases may present procedural problems which are common to many international disputes. A State may espouse a claim for damages, the damage having been suffered by its subjects, and been attributable to transfrontier pollution. This is a claim similar to a “normal” case of diplomatic protection for citizens injured by another State. Pollution may be caused by private industrial activity, in which case the question of State responsibility for private acts arises. This responsibility may be based on the fact that the State
has licensed or authorized the activity in question, or on its failure to supervise adequately potentially harmful activities. This is also a "normal" feature of disputes relating to the international responsibility of States.

The solution of transfrontier environmental problems, however, requires procedures which are, to a certain extent at least, specific to environmental law, as understood in a broad sense. The reasons for this lie both in a certain deficiency of substantive law and in the complexity of the problems to be considered. Under customary international law, transfrontier pollution is unlawful only where "the consequences are serious", where serious damage has occurred or is likely to occur in the exposed State. This level of seriousness is difficult to determine in the absence of specific treaty rules. Thus, if substantive law is inadequate to solve the dispute, the principle of good neighbourliness requires procedures designed to facilitate a negotiated solution. These procedures may be directed towards settlement of a specific dispute, but may also serve to cope with the underlying environmental problems in a broader perspective. One of the purposes may be the development of the applicable substantive law, the establishment of an ecostandard for a certain shared resource, or the harmonization or concertation of national rules relating to environmental pollution. This leads us to the second aspect just mentioned: one must recall that transfrontier environmental problems are not limited to the question whether pollution originating from a specific source is lawful or not. Also relevant are questions such as the existence of protective measures on the side of the exposed State, including their financial implications, and the separation of incompatible land uses (e.g. industry on one side of the border, recreation and residential areas on the other). There is the question of equitable sharing of uses of common resources, which requires procedures for allocating these uses among various States; the uses of a stream for sewage disposal, for cooling and irrigation purposes, for drinking water production must be allocated in an equitable way among various States. The need efficiently to use scarce resources will, in the long run, induce States even to abandon the principle of equitable allocation of uses in favour of a maximization of the aggregate utility of a shared resource, a principle which may require certain States not to use that resource at all. Furthermore, there is a growing awareness that the prevention and elimination of injury to health and property (which has been underlying "traditional" national and international environmental law) is not sufficient as a basic concept for environmental policy. Instead, modern environmental policy should also (even primarily?) be based on the idea of preserving eco-systems, biotopes. These questions cannot be solved by static provisions of substantive law, they must be solved by continuous co-operation, for which institutionalized procedures are needed. In this paper an attempt is made to describe some of these procedures of transfrontier environmental management.

II. The Scope of Participation in Procedures Relating to Transfrontier Pollution

Pollution follows the laws of physics and does not respect State borders. The first question to be answered is this: who may be involved in procedures relating to cases of pollution which affect areas beyond the territory of a State? The
answer is very simple in principle: those people affected by such pollution\(^3\).

Water pollution of a lake affects all riparian States, pollution of a stream can affect a whole hydrographic basin. A number of treaties dealing with the pollution of international waterways have as parties all or most riparians of the entire basin, e.g. the Treaty concerning the Rhine between Switzerland, Germany, France, Luxembourg, the Netherlands and the European Communities\(^4\). It has become customary to regard the pollution of a certain sea area as being of concern to all riparian States in that particular area\(^5\). Thus, pollution of the Mediterranean is regulated by a Convention between the States bordering that sea. Air pollution is often regarded as a bilateral problem: controversies may arise between the country from whence air pollution originates and the one where the effect of such pollution is felt. Particular problems of air pollution may involve more than two States, e.g. the acid rains over Scandinavia originating from industrial pollution in Germany and the United Kingdom\(^6\). There are also trends towards the regional control of air pollution, not only for economic reasons\(^7\), but also because air pollution may be a regional phenomenon - what is a regional airshed may also be a shared natural resource like a hydrographic basin\(^8\). Such regional control requires the participation of all States belonging to the particular airshed\(^9\).

Another aspect of the same problem is that of the level of government participation in the relevant procedures. Pollution may particularly affect one political subdivision of a State. The regulation of a particular environmental problem may, according to the system of division of powers within a State, fall within the legislative or administrative competence of such a subdivision. In these cases, the question arises whether the political subdivision in question can or should be able to participate in the relevant transnational procedures\(^10\). Furthermore, should an affected municipality be involved in the negotiating process relating to the licensing of a polluting installation on the other side of an international border? Should the development of zoning concepts in a border area be in the hands of national governments acting in concert or (and?) in the hands of the local planning authorities (competent for the relevant internal decisions). This participation of local authorities (either with or without national authorities) in transnational co-operation over environmental issues poses a number of difficult legal problems concerning foreign affairs, from the point of view of both international and municipal law\(^11\): Are political subdivisions entitled to enter into binding transfrontier agreements? Is an affirmative answer to this question not in conflict with the foreign relations power of the national government? Under which legal order would such agreements be concluded: international law, national law of one of the States concerned, or a legal order sui generis? Resolutions of the Council of Europe\(^12\) and of OECD\(^13\) favour local transfrontier co-operation of this kind, and a Convention has been elaborated by the Council of Europe for the purpose of setting aside existing legal obstacles\(^14\). Co-operation between the entities most directly concerned certainly offers the definite advantage of having problem-solving machinery close to the problem itself and close to the citizen concerned. A trend towards such co-operation can be noticed along many borders\(^15\). Compromise solutions have been found in a multilevel approach: by having certain bodies involved in transfrontier environmental co-operation composed of representatives of both the central government and the regional and/or local political subdivisions\(^16\). This solution has been adopted, for instance, in the Upper Rhine area\(^17\).
III. Procedural Duties in Relation to Transfrontier Pollution

1. The principle of good neighbourliness and a general duty to co-operate

The relations of two neighbouring States are, under general customary international law, governed by the principle of good neighbourliness. This means that a State may not act with complete disregard for the interests of its neighbour(s)\(^1^8.\) But this is too general a proposition to provide any precise solution when it comes to specific problems of neighbourly relations\(^1^9.\) However, what can probably be derived from the principle is a general obligation to co-operate\(^2^0.\) A general duty upon States to co-operate with one another to solve conflicts between neighbours may also be derived from the Charter of the United Nations\(^2^1.\) More decisive, however, are the large number of treaties obliging neighbouring States or States having a common interest in a particular eco-system to co-operate for the purposes of preserving the environment. Treaties of this kind mainly concern water resources. The Barcelona Convention on the Mediterranean Sea\(^2^2,\) the Conventions concerning Lake Constance\(^2^3,\) Lake Geneva\(^2^4,\) Lake Tchad\(^2^5\) and the U.S.-Canadian Treaty on the Great Lakes\(^2^6\) may be mentioned in this regard. A good example of this kind of general obligation to co-operate is contained in Art. 3 of the draft European Convention for the Protection of International Watercourses\(^2^7\) which provides that: "The contracting parties undertake to co-operate with each other with a view to achieving the aims of this Convention". Treaties relating to co-operation on media other than water are less common. Co-operation on environmental issues generally or on specific subjects are often found in bilateral treaties and arrangements\(^2^8.\) For the European States, the United States and Canada, a political pledge to co-operate in the field of environmental protection is contained in the Helsinki Final Act of 1975\(^2^9\).

2. Duties to provide information

More important than a general duty to co-operate, there are some specific duties relating to environmental protection. It is essential that a State should, in order to be able to protect itself and to assert its interest in enjoying an unharmed environment, receive timely knowledge of projects being carried out in a neighbouring State or of disasters therein affecting or likely to affect its own environment. It is safe to say that a practice of States has developed to give such notice, and that a customary legal duty to do so has resulted therefrom\(^3^0.\)

Such a duty to provide information has also been incorporated in numerous international treaties. These are treaties relating to the preservation of certain boundary waters, or to specific environmental hazards, such as oil pollution incidents\(^3^1.\)

3. Duty to consult or to negotiate

Once a State has obtained knowledge of a possible danger to its environment originating in another State, the next question which arises is whether the State of origin is under a duty to enter into consultations or negotiations regarding that danger. Although such negotiations and consultations are a frequent feature of State practice, there have also been cases where States have simply refused to
speak about a project which other States claimed to constitute a transfrontier environmental hazard. There is, however, good authority for the thesis that a general duty to consult and negotiate exists in cases where transfrontier pollution has occurred or is likely to occur. This duty is particularly well established for shared water resources\(^\text{32}\), but is not limited to them\(^\text{33}\). A large number of international treaties provide a duty to consult or negotiate, e.g. the Dutch-German Settlement Treaty on Water Management\(^\text{34}\). A number of international treaties reinforce the duty to consult or negotiate by providing for a "standstill" obligation\(^\text{35}\).

4. **Channels of communication and permanent co-operative bodies**

The institutional framework for co-operation in environmental matters is of particular importance. General channels of communication existing between States by virtue of their foreign ministries and diplomatic missions are generally not adequate to deal with these environmental matters, although they have to be used where no other mode of communication exists.

Many international treaties and informal arrangements provide for specific channels of communication, i.e., for direct communication between the authorities immediately concerned\(^\text{36}\). This is faster and more efficient. Thus, the Agreement on the Taking of Water from Lake Constance empowers the competent water authorities of the Contracting Parties to deal with one another directly\(^\text{37}\).

In a number of cases, communication between the Governments and/or political subdivisions concerned is assured by permanent co-operative bodies which have been established as a tool of co-operation for particular environmental questions. The International Joint Commission established under the Boundary Water Treaty between the United States and Canada\(^\text{38}\) is perhaps the best-known example in the field of water pollution. In Europe, there exist a number of international commissions for the preservation of certain lakes and rivers or for certain boundary waters\(^\text{39}\). Permanent bodies have also been set up for certain seas (the Mediterranean\(^\text{40}\) and the Baltic\(^\text{41}\)). Common questions of town and country planning are dealt with by international commissions along the Western and Southern border of Germany\(^\text{42}\). Specific commissions have been set up to deal with problems affecting transfrontier metropolitan areas, particularly for problems of planning\(^\text{43}\).

5. **The concept of the common management of shared resources\(^\text{44}\)**

The permanent institutions just described are perhaps the most striking feature of a new concept of international neighbour law: transfrontier environmental management. It is impossible to deal with single incidents of water pollution affecting areas beyond a State's borders if the States directly involved have not worked out a common concept of environmental policy relating to that water system. The tasks of the institutions described are related to this end, although most of them do not have broad powers of a political decision-making nature. Their powers are rather limited to study, research, monitoring, surveillance, evaluation and, in some cases, recommendation\(^\text{45}\).
Another instance where some kind of common management in frontier areas is required is land use planning. Pollution emanating from industrial installations will cause less inconvenience if a common zoning concept prevents the placing of residential or other sensitive areas close to such installations. Plants which produce heavy pollution, create high risks or need great quantities of air or water for cooling purposes require large spaces which have to be kept free from incompatible uses. Thus, adequate industrial sites have become a scarce resource. In the case of small states in densely populated areas, a pooling of these resources and a concertation of their use becomes unavoidable. This has to be done through the development of a common industrial siting policy by the States concerned. Some regional agencies concerned with planning questions have been mentioned. But, as in the case of common management of water resources and perhaps even more so, the powers of these agencies are limited to deliberation, research and study. The actual planning remains in the hand of the States. For example, moves to establish a common EEC policy for siting power plants have not advanced very far to date.

But it is possible, at least, to discern a trend towards the development of common transfrontier land use planning concepts. The establishment of an effective transnational machinery to deal with transnational environmental problems remains, however, a difficult task for the future.

IV. Private Remedies in Cases of Transfrontier Pollution

In cases of actual or potential transfrontier pollution, it may not only be the affected State which seeks redress, but also an affected individual or a group of private citizens. Such redress might be sought by bringing an action against the polluter in the courts of the country of origin or in those of the affected country.

Transfrontier actions of this kind pose a certain number of problems with regard to which, in recent years, progress towards solutions has been made.

1. Civil actions

The first kind of possible action is a civil one for damages. An action brought in the country of origin has definite advantages for the plaintiff as far as enforcement is concerned. An action brought in the affected country may be more convenient for the plaintiff because he remains within the legal system he is familiar with; but this convenience is only of use if the judgment can be executed in the country of origin. Whether or not the courts will assume jurisdiction in such cases depends on national procedural law. The European Convention on Jurisdiction and Enforcement of Judgments in Civil and Commercial Matters, as interpreted by the Court of Justice of the European Communities, provides for the jurisdiction both of the courts of the country of origin and those of the affected country. The solution favoured by the Nordic Convention on Environmental Protection is for the action to be brought in the country of origin. Under the law of most States of the United States, actions may be brought both in the State of origin and at the place where the injury is sustained, but under Canadian law only at the place where the injury is
Injunctive relief against a polluter would have to be sought, under the law of many countries, in the courts of the State of origin of the act.

The second problem raised by a transfrontier civil action is that of the applicable law. Here, the solutions vary widely from country to country and this is a matter which could and should be harmonized by international agreement.

2. Administrative law suits

Another important remedy for private citizens are actions against public authorities in the country of origin challenging the grant of a licence to a polluting installation. In continental Europe, such actions often fall within the jurisdiction of administrative courts as opposed to ordinary courts.

These actions often have the advantage of preventing pollution before it occurs. They are of particular importance when a licence precludes the possibility of any civil law injunctive relief to stop the polluting activity or even any payment of damages. On the other hand, such actions present a number of legal difficulties. The problem is not that the plaintiff or applicant is a foreign national; as a rule, administrative courts are open to foreign nationals. But this does not solve the problem of standing. The question of standing is a procedural bar to an *actio popularis*, an action by anyone. A plaintiff must establish a certain legally protected interest in the case, otherwise his action is not admissible. Whether the notion of "legally protected interest" is construed as being an element of substantive or of procedural law, the question arises in both cases whether national law protects interests situated outside national territory. If the answer is in the negative, a plaintiff challenging a national licensing decision on the basis of harmful effects occurring outside national territory will have no standing.

This has been the attitude adopted by the Supreme Administrative Court of Austria. In an action brought by persons residing in Germany relating to noise originating from the operation of an airport in Austria, that court held that Austrian public law was only applicable to Austrian territory and that the claimants, residing as they were in Germany, could not therefore rely on the protection of that law. Whether this Austrian view would be shared by other countries appears, however, to be highly doubtful. A certain number of international developments militate against such a restrictive stance. The restrictive view is incompatible with resolutions passed both by the Council of Europe and by the OECD requiring that States should consider damage caused to the environment of foreign countries in the same way as if this damage had occurred in the country of origin, and to grant to residents of the foreign country affected equal access to national courts. The Nordic Convention on the Protection of the Environment is based on this very concept.

The provisions of the United States National Environmental Policy Act have also been interpreted as requiring the consideration of adverse environmental effects which may be likely to occur outside the United States.
3. Private remedies - some limitations

Although a certain trend seems to exist towards facilitating transfrontier action by private citizens, such actions encounter a number of legal difficulties which might and quite often do deter the individual concerned from relying on those remedies. Some of the difficulties may be solved by international conventions such as the European Convention on Transfrontier Co-operation between Territorial Authorities and Communities and the Scandinavian Convention on the Protection of the Environment. But the practice of many States indicates that the inhabitants of States affected by transfrontier pollution prefer to rely on some kind of protection afforded by their government or as the case may be by local authorities.

These difficulties would certainly be overcome if there were institutional devices for common planning in frontier areas where the interests of both sides could be accommodated in one single planning process which could provide for a system of judicial review open on equal terms for parties affected on both sides of the border.
Footnotes


2 See the paper by Sand, supra pp. 313-314; see also Bothe, "The trends in both national and international politics for achieving a unification of Standards in pollution matters", (1976) Zeitschrift für Umweltpolitik 293-312; P.M. Dupuy, La responsabilité internationale des Etats pour les dommages d'origine technologique et industrielle (Paris, 1976), pp. 270 et seq.


5 Okidi, Regional Control of Ocean Pollution (Alphen, 1978), passim.

6 See the OECD Documents: Co-operative Technical Programme to Measure the Long-range Transport of Air Pollutants (1972); Ad hoc Meeting on acidity and concentration of sulphate in rain - 1969 (1971).


9 The work of the Economic Commission for Europe on long-range transfrontier air pollution is proof that air over Europe is, at least to a certain extent, considered to be a common resource. See the Annual Reports of the Economic Commission for Europe: 1977/78, E/1978/47, para. 223 (Working area 05.5.1.1): 1976/77, E/5944, para. 192; 1975/76, E/5781, para. 161 (Work area 5.1); 1974/75, E/565, para. 126; 1973/74, E/5470, para. 121; see also Doc. E/ECE/964 para. 65. This work has resulted in the (European) Convention on Long-Range Transboundary Air Pollution, Nov. 13, 1979, 18 ILM 1979, p. 1442.

10 See Bothe, "Rechtsprobleme grenzüberschreitender Planung", 102 AöR 1977, 70 et seq.

11 Bothe, loc. cit.; P.M. Dupuy, "La co-opération régionale transfrontalière et le droit international" (1977) AFDI 837-880.

12 Council of Europe, Committee of Ministers, Resolution (74) 8 on Co-operation between Local Communities in Frontier Areas, Feb. 27, 1974.


14 Draft European Outline Convention on Transfrontier Co-operation between Territorial Authorities or Communities; Council of Europe, Parliamentary Assembly, Doc. 4370, June 1st, 1979.


16 See Bothe, loc. cit., 83.
17 So-called Commission tripartite, below n. 43, composed of representatives of the national governments, of cantonal and Länder or regional administrations. See Witmer, Grenznachbarliche Zusammenarbeit (Zürich, 1979), in particular pp. 148 et seq.

18 See Wildhaber, loc. cit., 102 et seq.

19 Klein, op. cit., n. 1, p. 117.

20 Klein, op. cit., pp. 286 et seq. only recognizes such a duty with regard to water pollution.

21 Wildhaber, loc. cit., 112.

22 15 ILM 1976, 290.


24 Amtliche Sammlung (official Collection of Swiss Laws) 1963, p. 969.

25 Sand, "Development of International Water Law in the Lake Chad Basin", 34 ZaöRV 1974, 52 et seq.

26 11 ILM 1972, 694.


29 14 ILM 1975, 1307 et seq.


31 See the examples quoted by Bothe, loc. cit., n. 3, 227 et seq.; Barberis, op. cit., n. 8, pp. 48 et seq., 108 et seq., 136 et seq. In addition, see Denmark - Federal Republic of Germany: Agreement Regulating the Exchange of Information on the Construction of Nuclear Installations along the Border, 4 July 1977, 17 ILM 1978, 274; of great importance in this field is the Nordic Convention on the Protection of the Environment, Feb. 19, 1974, 13 ILM 1974, 591, containing detailed provisions on notification procedures (Art. 5-10). See also Principles 6 and 9 of the draft Principles of conduct concerning Shared Natural Resources, 17 ILM 1978, 1098.


33 Pop, Voisinage et bon voisinage (Paris, 1980), pp. 285 et seq.; Wildhaber, loc. cit., n. 1, 100 et seq.; contra Klein, op. cit., pp. 298 et seq. Klein does not even accept that there is a duty to consult or negotiate in cases of shared water resources.


35 Art. 1 para. 3 of the Agreement for the Protection of Lake Constance against Pollution.

36 Bothe, op. cit., n. 3, at p. 226.

37 N. 23.

38 See n. 26.

39 Special commissions dealing with questions of pollution have been set up for the Rhine, the Moselle, the Lake Constance, Lake Geneva, the Baltic Sea, see the agreements supra n. 4, 22-24, and the Convention on the Protection of the Marine Environment of the Baltic Sea, 13 ILM 1974, 544.

40 Supra n. 22.

41 Supra n. 39.

42 See e.g. the Agreements on Co-operation in the Field of Town and Country Planning between the Federal Republic of Germany and Austria (Dec. 11, 1973), BGBI. 1974 II 1110 and between the Federal Republic of Germany and the Netherlands (March 30, 1976), BGBI. 1977 II 35.
As far as regional planning in the Upper Rhine area is concerned, a "Tripartite Commission" has been established by France, the Federal Republic of Germany and Switzerland. The Commission is now based on an Exchange of Letters, dated Oct. 22, 1975, between the three governments, BGBI. 1976 II 194.

See the paper by Riphagen, supra p. 350.


The draft Principles of Conduct concerning Shared Natural Resources (n. 31) adopt a rather timid approach to the concept of common management. However, see in particular principle 2: "In order to ensure effective international co-operation in the field of the environment concerning the conservation and harmonious utilization of natural resources shared by two or more States, States sharing such natural resources should endeavor to conclude bilateral or multilateral agreements between or among themselves in order to secure specific regulation of their conduct in this respect, applying as necessary the present principles in a legally binding manner or should endeavor to enter into other arrangements, as appropriate, for this purpose. In entering into such agreements or arrangements, States should consider the establishment of institutional structures, such as joint international commissions, for consultations on environmental problems relating to the protection and use of shared natural resources." For a comprehensive survey of the question of land use planning in border areas, see Fröhler/Oberndorfer/Zehetner, Rechtsprobleme grenzüberschreitender Planting (Linz, 1977).


8 ILM 1969, 229.

Court of Justice of the European Communities, Rec. 1976, p. 1735.

McCaffrey, Private Remedies, op. cit., n. 47, pp. 23 et seq., 68 et seq.


See the proposal by Rest, Convention on Compensation for Transfrontier Environmental Injuries, op. cit., n. 47.

McCaffrey, Private Remedies, op. cit., n. 47, pp. 74 et seq.


Supra n. 31, Art. 2 in particular.

See the "U.S. Council of Environmental Quality Memorandum", Sept. 24, 1976, 15 ILM 1976, 1427. Recently, a draft treaty on international environmental assessment has been elaborated in the U.S. Senate which, if concluded, would assure reciprocity on this U.S. stance, 17 ILM 1978, 1082.


Supra n. 14.

Bothe, loc. cit., n. 10, 87.
### The authors

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michael Bothe</td>
<td>Professor of International and Public Law, University of Hannover</td>
</tr>
<tr>
<td>Susan De Kock</td>
<td>Market Research Analyst, Sperry, New Holland</td>
</tr>
<tr>
<td>Mireille Delmas-Marty</td>
<td>Professeur à la Faculté de Droit de Sceaux, Université de Paris Sud</td>
</tr>
<tr>
<td>Bruno Demel</td>
<td>Assistant, Faculty of Law of the Justus-Liebig-University, Giessen</td>
</tr>
<tr>
<td>Rudolf Dolzer</td>
<td>Research Fellow, Max-Planck-Institute of Comparative Public Law and International Law, Heidelberg</td>
</tr>
<tr>
<td>Pierre Dupuy</td>
<td>Professeur à la Faculté de Droit, Université de Paris XII</td>
</tr>
<tr>
<td>Hans-Georg Fey</td>
<td>Head of Division, Regierungspräsidium, Cologne</td>
</tr>
<tr>
<td>Carl August Fleischer</td>
<td>Professor of Law, University of Oslo, Special Consultant to the Norwegian Ministry of Foreign Affairs</td>
</tr>
<tr>
<td>Malcolm J. Forster</td>
<td>Lecturer in Law, Director, Centre for Energy, Law and Policy, University of Southampton</td>
</tr>
<tr>
<td>John F. Garner</td>
<td>Professor of Public Law, University of Nottingham</td>
</tr>
<tr>
<td>Lothar Gündling</td>
<td>Research Fellow, Max-Planck-Institute of Comparative Public Law and International Law, Heidelberg</td>
</tr>
<tr>
<td>Karl-Heinrich Hansmeyer</td>
<td>Professor, Public Finance Research Institute of the University of Cologne</td>
</tr>
<tr>
<td>Ramatullah Khan</td>
<td>Professor of International Law, Jawaharlal Nehru University, New Delhi</td>
</tr>
<tr>
<td>Alexandre Ch. Kiss</td>
<td>Directeur de Recherche au Centre National de la Recherche Scientifique, Professeur à l'Institut d'Etudes Politiques de Strasbourg</td>
</tr>
<tr>
<td>Name</td>
<td>Position and Affiliation</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Cyrille de Klemm</td>
<td>Consultant sur les problèmes juridiques de la conservation de la nature auprès de l’UICN et d’autres organisations internationales</td>
</tr>
<tr>
<td>Rüdiger Lummert</td>
<td>Research Fellow, International Institute for Environment and Society, Science Center Berlin</td>
</tr>
<tr>
<td>Peter Malanczuk</td>
<td>Visiting Lecturer, University of Exeter</td>
</tr>
<tr>
<td>Eckard Rehbinder</td>
<td>Professor of Trade Regulation and Environmental Law, University of Frankfurt</td>
</tr>
<tr>
<td>Willem Riphagen</td>
<td>Professor of International Law, Erasmus University, Rotterdam. Legal adviser to the Dutch Ministry of Foreign Affairs</td>
</tr>
<tr>
<td>Peter H. Sand</td>
<td>Secretary General, Convention on International Trade in Endangered Species of Wild Fauna and Flora</td>
</tr>
<tr>
<td>Heinhard Steiger</td>
<td>Professor of Public Law, esp. International Public Law, Law of International Organizations and European Law, Justus-Liebig-University, Giessen</td>
</tr>
<tr>
<td>Geoffrey Wandesforde-Smith</td>
<td>Associate Professor of Political Science and Environmental Studies, Director of the Centre for Environmental and Energy Policy Research, University of California at Davis</td>
</tr>
</tbody>
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