Assessment of Damage

An Appraisal of "Assessment of Damage to the Environment"

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This Council of Europe publication has been written by Franco Giampietro[1] and Saverio Miccoli[2], and was published in October 1992.

Introduction

The publication of this impressive document is timely. The EC draft Directive on Civil Liability for Damage Caused by Waste (COM(91) 219 final) had ground to a halt – apparently awaiting the publication of the Commission's green paper on civil liability, which was announced in March and deals more generally with civil liability for all environmental damage rather than specifically focusing on waste. Meanwhile the eventual pan-European solution to the harmonisation of civil liability provisions is unclear. It certainly is possible that solution may emerge not from within the EC but by state or EC adoption of a Council of Europe Convention (see ENDS 204 p 14). The *Assessment of Damage to the Environment* is indicative of the possible objectives and provisions which could be contained in such a European Convention[3].

The proposals that the report contains would, if adopted, revolutionise assessment of environmental damage in Europe and go far beyond the proposals of the draft EC Directive on Civil Liability for Damage caused by Waste.

Substance of the Report

The report comprises two parts:

Part I: Defining "The Environment"

Part I reviews existing instruments for dealing with damage to the environment. The authors begin by noting that traditionally "the environment" has been legally defined to include only appropr*iable* (if not necessarily appropr*iated*) entities. This narrow traditional view is criticised; the authors suggest that the

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[3]The Council of Europe draft Directive has now been published and it is hoped to review both this and the Commission's green paper on Civil Liability for Environmental Damage in future issue(s) of the Review.

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environment should be considered as including a wide range of non-appropriable entities including un-owned natural resources, "salubrity", landscape, cultural resources etc. These commonly belong to the state, local bodies and associations who "manage them not only in the interest of but also to grant full direct enjoyment to the community . . .".

The report reviews current national and international definitions of "environment" even the broadest of which, it is noted, appear to omit reference to the biosphere, ecosphere, environmental processes, genetic heritage (extinction of species or sub-species) or ecosystems on the whole. The current EC definition of "environment" contained in Directive 85/337 (the Environmental Impact Assessment) is criticised as "confused". The definition in the draft Directive on Damage Caused by Waste is criticised as "too narrow". Although the report draws back from proposing a new specific wider definition of environment, it does suggest that, whatever definition is preferred, damage to the environment should be akin to *strict liability* – depending on the simple question of whether the modification of the environment which has occurred is or is not allowed by the system.

Critique of Existing Protective Instruments

Techniques for affording protection of the defined environment are reviewed. These include reliance on private rights ("*troubles de voisinage*"), criminal and administrative law. The conclusion drawn is that all are incapable of achieving the desired goals of protection.

Direct application of private rights is judged insufficient since, it is contended, both legislature and courts, weighing zoning and efficiency considerations, tend to promulgate laws favouring industry. Furthermore it is noted that many natural resources are not in private ownership and therefore are not protectable in this manner. Indirect private action (eg judicial review) is also perceived as weak; difficulties exist in relation to *locus standi* and inability to seek re-instatement for harm done. Moreover, the authors contend that both direct and indirect citizen action is, in any case, undermined by the public's "lack of knowledge of environmental values" coupled with "the possibility of reaching a compromise with the liable party . . . without any obligation . . . to re-instate destroyed resources".

Criminal sanctions administered by regulatory agencies are judged to be insufficient since they tend to be fragmentary (ie concerned with specific pollution phenomena and/or specific media), tend to ignore the cumulative and synergistic effects of pollutants, and even when successful are not usually accompanied by any obligation of restoration. However the report does provide a synopsis of some interesting developments in the use of criminal sanctions in other Council of Europe States. One example is the imposition of suspended prison sentences contingent on the defendant's agreement to re-instate the damage caused. Another technique only recently introduced into the Italian Criminal Code is apparently to allow a guilty party to pay only half the fine where he undertakes to remedy the harm done[4]. A third approach is ordering the polluter to pay back any profit (or some multiple thereof) made by the party liable for the damage.

Administrative regimes (eg planning controls, agency regulation of pollution) are attacked as being "mostly concerned about allowing *development* of industrial activity" (emphasis added) and as having "tend[ed] towards strengthening of business activity, hav[ing] weakened the application of measures regarding prevention and re-instatement of damage to the environment".

Extension of Civil Liability

In the light of the weaknesses set out above Giampietro and Miccolo's favoured response is further development of the use of civil sanctions. Although the report is unclear on this point, it would appear implicit from the critique of private rights that the authors are referring to civil sanctions initiated by state or regulatory authorities. Although civil sanctions are viewed as preferable the method of assessment of damages set out in Part II of the report would appear to be applicable to civil, criminal, private and administrative actions.

The major thrust of the report is that in order for environmental damage to be *fully* compensated both a) the plurality of use of the same resource, and b) the interdependence of damaged components of the environment, must be taken into account. There is therefore an inevitable need to make a monetary assessment not only of *re-instatement costs* but also the factors mentioned above. Unless some attempt is made to assess the full extent of environmental damage in monetary terms, it will be impossible to assess in cost-benefit terms the efficient limit of re-instatement.

The authors suggest that the starting point should always be the goal of *total* recovery of the damaged resource – not only are resources the heritage of future generations but such an approach prevents upset of natural balances which may have unpredictable long-term effects. The authors also suggest that the obligation to re-instate should not be dependant on the polluter's resources.

A dual approach is recommended for compensation assessment according to factors such as the size of the incident: where slight damage is concerned simplified assessment procedures are appropriate which clearly should not be more costly to apply than the damage itself (this comment seems to be a tacit reference to the damage assessment procedures formulated by the US Department of the Interior under CERCLA ("Superfund") which have been criticised as being too expensive to administer in small cases). In these cases the authors suggest that lump-sum (ie non-assessed) damages should be paid since this is simple to administer and requires no calculation. In more complex or serious cases a suite of techniques for dealing with environmental damage

[4]For an interesting example of penalty negotiation see the saga of the *Exxon Valdez* prosecution (S Raucher, "Raising the Stakes for Environmental Polluters: The Exxon Valdez Criminal Prosecution", (1992), 19 Ecology Law Quarterly 147–185). Exxon negotiated a $125m fine – far lower than anticipated – upon agreeing to pay $700m in reimbursement of federal agency clean-up costs.

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are identified:

i) reinstatement;
ii) compensation in kind;
iii) assessment of damage;
iv) assessment by public authorities rather than courts;
v) negotiation between polluter and party seeking compensation.

As to the usefulness of these, the report notes that re-instatement will be difficult where there is no reliable record of pre-existing environmental quality; compensation "in kind" will be useful where re-instatement is not technically or economically feasible; and negotiation is considered by the authors to be generally unattractive.

Part II

Part II sets out a new method for assessment of damage to the environment suitable for more incidents. On the assumption that a broader definition of "environment" (explored in Part I – see above) is appropriate, it is suggested that an adequate monetary assessment of environmental damage must take into account:

(i) the damage to natural functions of the ecosystem;
(ii) the effects of the damage on aesthetic and cultural functions;
(iii) the effects on economic activity and public health.

These are considered below in turn.

Assessing Damage to Natural Functions

The suggested method has similarities to the US Department of the Interior's regulations, promulgated under the "Superfund" legislation, which allow for environmental damage to be assessed using "contingent valuation" methods. Theoretically contingent valuation methods can be used either as an alternative to or in addition to traditional "costs of re-instatement" methods. Their function is to assess the loss of "*public welfare*" resulting from environmental damage. They involve conducting surveys to determine the public's hypothetical willingness either to pay for environmental quality or to accept compensation for environmental degradation. This much of the report's approach is not new. However the suggested method of implementing these techniques is radical. The US DoI use of contingent valuation methods follows the traditional *ex post* paradigm; assessment of both a) the actual physical loss of natural components and b) public willingness to pay (accept compensation) for maintenance (loss) of these components is performed *after* the damaging event. Giampietro and Miccolo, however, propose an *ex ante* technique. This involves preparing detailed regional and local "environmental plans". The primary function of these would be to assess accurately a) the pre-harm state of the environment and b) normal willingness to pay to maintain that standard of environmental quality. Such information could be used to produce a graph or table ("regression") which would indicate the public's willingness to pay for a continuum of differing standards of environmental quality.

The advantage of such a technique is that as soon as any occurrence causes a loss or modification of any natural elements then the loss in public welfare can immediately and automatically be calculated. In order to prevent *de minimis* claims, damages would not become payable unless an agreed "threshold" of loss of public welfare was exceeded (p 35).

This approach avoids a major difficulty for traditional valuation methods: many aspects of the environment do not have a ready market. It also avoids the difficulty inherent in *ex post* contingent valuation that reported willingness to pay may spuriously increase upon knowledge of a polluting incident.

Damage to Aesthetic and Cultural Functions

This is defined by the authors as "the decrease in community benefits accruing from the damage to the aesthetic and cultural benefits of the environment". In addition to re-instatement it is suggested that the "public loss" resulting from the *temporary* interruption of such benefits should be compensable. The technique suggested for this calculation is a comparison of *ex ante* and *ex post* contingent valuation ie surveys of public willingness to pay for the benefits before and after damage.

Damage to Economic Activity and Public Health

The authors maintain that compensation of these categories of damage is necessary when it is recognised that the environment provides income and is vital for the continuation of good public health. Damage to economic activity requires assessment of the difference in capital values and income from the environment before and after the damaging event. The suggested assessment method, recognising the link between good health and economic activity, relies on a formula which includes such factors as income flow (both due to reduced health and loss of environmental resources) and the current value of health care.

Conclusion

The report ends by re-iterating the belief that environmental damage is more than loss of market value or costs of reinstatement. The social cost (in lost public welfare) must be included in the assessment. Giampietro and Miccoli acknowledge criticisms (cost, inaccuracy, reliability) which have been made of contingent valuation methods but optimistically conclude that even though the current state of development of such techniques is not perfect, the best way forward would be to implement their proposed strategy and to refine the method as and when practical experience allows for better assessment.

Comments

There are clearly many useful ideas in this document: for instance it is becoming apparent that the traditional definition of "the environment" needs to be extended and that imaginative use of criminal sanctions can be particularly effective. However the

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particular valuation method proposed may be greeted with less enthusiasm.

Although at no point stated by the authors, the theoretical underpinning of contingent valuation used in this exploration of damage assessment is the classic Pigouvian economic analysis of pollution damage (see D Pearce & K Turner: *Economics of Natural Resource Management and the Environment*, 1990). The principle is that if the costs of environmental damage are borne by the polluter, market inefficiencies will be avoided and the net benefit to society will be maximized. This is commonly expressed as the Polluter Pays Principle. In turn this model is based on utilitarianism ie the maximisation of societal utility by limiting activities which cause environmental damage to the point where the external costs of such damage equal the benefits to society. Since utilitarianism knows of no absolute moral (or other) rights it is not possible to guarantee any particular environmental quality standards using this approach. This of course, is contrary to the long standing EC policy of mandatory achievement of environmental quality standards. This point may be illustrated if we consider the case in which damage occurs to an unpopular (or unknown) but scientifically important natural resource. In such cases the damages calculated according to Giampietro and Miccoli's method would be small – too small to pay for its re-instatement.

A further difficulty is that contingent valuation methods may lead to huge variations in assessment of damage to resources of similar environmental significance. Unpopular resources (such as worms, rats, microbes etc) are likely to be valued at zero and yet may be of critical importance within an ecosystem. Conversely, damage to highly popular aesthetic resources (eg noted beauty spots of national importance) may lead to astronomical damage calculations. Where a site of *international* importance is damaged the magnitude of the calculated damages may depend arbitrarily on the number of people who are in fact surveyed. Whilst economic theory may predict these vast differences it is unclear whether, in practice, they are desirable. It must be borne in mind that the cost of compensating the public for lost aesthetic or cultural enjoyment may ultimately fall on the public itself via pricing mechanisms.

It may also be doubted whether the *ex ante* pan-European survey of natural resources required by the suggested technique would not itself be a waste of resources. Not only would the project be of an immense scale but it would also require periodical revision due to natural variations in environmental resources (in much the same way as maps require periodic review). Such disutility might partly or totally offset the advantage of easy calculation of damages.

Finally, the report pays little attention to other well known criticisms of contingent valuation methodology. Indeed, there are many reasons to believe that surveys of public hypothetical willingness to pay/accept compensation inevitably are irredemably unreliable. For instance since the interviewees are being asked to state a *hypothetical* figure for willingness to pay/accept compensation there is little reason to believe that this will correlate to their actual willingness to pay/accept compensation. The US experience of contingent valuation methods is not entirely favourable and there is a now pressure there to move back to simpler methods such as liquidated damages or mere re-instatement costs. Given these objectives the suitability of the methodology contained in this report for a pan-European solution to assessment of environmental damage may be doubted.