SESSION 5 - BEARING THE COSTS OF REMEDIATION: POLLUTER PAYS AND OWNER PAYS PRINCIPLE

CHAIR: MR. ONNO VAN SANDICK, NETHERLANDS

CO-CHAIR: MR. SIEGFRIED LAGGER, SWITZERLAND

INTRODUCTORY REMARKS OF THE CHAIRMAN[1]:

Mr. Onno van Sandick, Ministry of the Environment

As you can see, we have many speakers.

I would like to introduce the speakers to you. Mrs. Pavla Kacabova from the Czech Republic, Mrs. Ivanka Todorova from Bulgaria, Mr. Siegfried Lagger from Switzerland, Mr. Michel Beaulieu from Canada and Mrs. Mihaela Lazarescu from Romania.

It's a wonderful occasion to have three ladies participating in this group.

We have learned a lot from each other and I hope you will be able to reach common conclusions, so listen carefully if you agree to what we say, because we intend to write an article as an Ad Hoc Group. Furthermore, I want to point out that we have made a compilation of all the papers, together with copies of previous sessions held in 1995 and 1997 where we also discussed third-party financing and similar issues that we are discussing here and we want to make available to everyone.[2]

That is all for now, so let's start with Mr. Siegfried Lagger's presentation.[3]

The floor is yours Siegfried.

Notes:

1) This text was prepared by the compilers from Mr. van Sandick's recorded presentation.

2) Reports of 1995 and 1997 meetings of the Ad Hoc Working Group on Contaminated Land referred to in this section are available for consultation and are thus not reproduced here.

3) Some papers reproduced in this section were not presented at the meeting because of uncontrollable events. The order in which the papers are presented here is respectful of the initial compilation and is therefore different from the Geneva Agenda.

Preface

This compilation contains:

- _ some presentations and papers written by members of the Working Group;
- _ some lists of answers to questions regarding the subject;
- _ some reports and papers regarding the same subject of past meetings of the Ad Hoc Group and other groups. *

The aim of this compilation is to provide a sound basis for the discussion in Geneva and to make the information available for future reference. The material of the previous meetings is included because many of the present participants were not present at those meetings and may not be aware of the valuable thoughts that were produced. *

The Working Group did not actually meet before the Geneva Meeting, but there have been some e-mail contacts.

The contributions are written on a personal basis and do not necessarily reflect the opinions of the countries or the ministers, which the Working Group Members represent. This is not an official publication but a “working file”.

I want to thank everybody who has helped to produce this work.

Onno van Sandick

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POLLUTER PAYS PRINCIPLE VERSUS OWNER PAYS PRINCIPLE - PRINCIPLES AND COMMON INSIGHTS

Speaker: ***Mr. Onno van Sandick***
Ministry of the Environment
Netherlands

Outline

- Polluter Pays:
  - Background
  - Limitations
  - Situation in the countries
- Owner Pays/is responsible:
  - Idem
- Multiple parties
- Lessons/conclusions

Contributors

- Pavla Kacabova (CZ)
- Mihaela Lazarescu (RO)
- Susan Bromm (USA)
- Ivanka Todorova (BUL)
- Tadashi Otsuka (JAP)
- Zsolt Horvath (HU)
- Angélique van Herwijnen (NL)
- Siegfried Lagger (CH)
- Michel Beaulieu (CDN)
- Ray Salter (NZ)

Systems under Construction

- Québec: proposed new Act
- CZ: draft-Act environmental damages
- Japan: legal commission
- NL: new policy industrial sites
- USA: Brownfields, reforms to CERCLA
- CH: parliamentary commission
- EU: directive for new cases

Polluter Pays

- Widely accepted:
  - as a Principle
  - in legal and financial instruments
- Background:
  - justice (fair distribution)
  - economic (right price, optimal allocation)
  - preventive effect (anticipation)

The Polluter has to Pay, but…

- Sometimes/often he/she is
  - not known
  - no longer exists
  - bankrupt/poor
  - not liable, because
    - he did not act unlawfully
    - he is not culpable
    - the claim is too old (prescription)

Possible Strategies

- Wide definition of Polluter
- Financial security
- Strict liability
- Taxation (ad hoc 1997)
- Voluntary action (ad hoc 1997)
- Other parties: owner of site, operator's relations with polluting company, beneficiary, investors, and government

Systems Differ

- Strict and retroactive liability: USA, CDN (AS)
- Fault liability, only for new pollution: CEE
- Fault liability, with limited retroactivity: NL, UK
- "Holder" or "Polluter" responsible: CH

Owner Remediates/Pays - Why?

- He is assumed to be the polluter;
- could have prevented the pollution;
- is always known;
- is responsible for risk from his property (dispersion, urgency);
- benefits from remediation;
- liability transfer from Polluter to Owner.

Owner Pays is Widely Accepted

- CH, BRD: responsible by virtue of position
- USA, CDN, and NL: liable party
- CEE: responsible, except when not user
- Japan: depends on type of land
- Proposals in CZ, NL, Japan and Québec: more focus on Owner
- Many countries: public law instruments

Definition of Owner

- **Wide definition:**
  - holder; CH
  - land custody; Québec (new)
- **List of PRP's:**
  - USA

Exemptions

- Innocent owner: USA, NL, CH, and Québec (new)
- Owner not user: HU
- Liability release/sign off
- Residential property owners: USA, NL
- Non-source owners: USA, NL

Owner Pays - Disadvantages

- Sometimes unfair
- Many parties are PRP
- Deters buyers/developers:
  - buyer is not innocent
  - liability risk even after cleanup

General Corrections

- Reasonableness: CH
- Hardship: UK
- Equality: all countries
- Human rights

Multiple Parties

- Joint and several: USA
- Multi-causation: NL
- Priority for Polluter: CH, NL, HU, and Québec
- No priority: CDN (AS), USA
- State decides the apportionment: RO

Effects of Liability

- Preventive effect is strong
- Curative effect less strong:
  - may lead to legal battles
  - depends on enforcement
  - depends on market forces:
    - incentive for voluntary action by historic owners
    - disincentive for developers

Lessons

- Make clear what is forbidden (discharge regulations, duty of care, dispersion, risk causation).
- One party, more roles.
- Use a mix of instruments.
- Use the market.
- Discern obligations: to investigate, to stop dispersion, to remediate, to pay.
- Make provision for urgent cases.
- Arguments for PPP for new contamination are felt much stronger, but apply for old as well.
- Use wide definitions or long lists of RP's.

Discussion: The Polluter must Pay, the Owner is responsible and in the end, the Developer does Pay.

Principle vs. Reality

Polluter Pays Principle

- Is often not effective.
- May have contra-productive effects.
- So, must be applied with care and with sense.

The Owner is Responsible; duties

- Do not pollute
- Stop dispersion/risks
- Avoid polluting activities on the site
- Inform buyers
- Restore baseline situation
- …etc.

Search for More Actors to Pay

- Both legal and practical reality is:
  - The polluter is not always to be held responsible.
  - The owner is not responsible for everything.
  - The developer is only willing to pay in case his benefits exceed the costs.
  - Create funds.
  - Accept that the government pays under certain conditions.

“The Polluter Pays” Principle

- Can be effective to prevent new soil pollution.
- But…. Requires enforcement, also in cases where the prevention failed.

Polluter Pays Principle versus Owner Pays Principle - Principles and Common Insights Regarding Contaminated Land

Mr. Onno van Sandick and Mrs. Angélique van Herwijnen
Ministry of the Environment
Netherlands

In preparation of the meeting of the Ad Hoc International Working Group on Contaminated Land, we have prepared a short paper. The purpose of this paper is to introduce the subject and provide a basis for reaction for the authors of the other papers on the same subject. We present some questions to be answered in the papers.

Contents

Polluter Pays Principle

- The Polluter Pays Principle is one of the oldest and best-known environmental principles. The OECD stated in 1972 (OECD Recommendation on Guiding Principles concerning Environmental Policies, May 26, 1972, 11, ILM, 1172) that:

  "*The polluter should bear the expenses of carrying out pollution prevention and control measures decided by public authorities to ensure the environment is in an acceptable state*".
- Some treaties (Helsinki 1992, Charleville-Mezière 1994), describe the principle as well, but mostly from the point of view that the costs to prevent, control and minimise pollution have to be born by the polluter. The declaration of Rio (1992) states:

  "*National authorities should endeavour to promote the internalisation of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the costs of pollution, with due regard to the public interest and without distorting international trade and investment*". Here, the Polluter Pays Principle is used in a broader sense.
- The European Community-Treaty states (art. 174.2):

  "*Community policy on the environment shall aim at a high level of protection taking into account the diversity of situations in the various regions of the Community. It shall be based on the precautionary principle and on the principles that preventive action should be taken, that environmental damage should as a priority be rectified at source and that the polluter should pay.*"

- The Soil Charter, adopted by Council of Europe on 30 May 1972, states:

  "*If industry or agriculture discharges toxic residues or organic waste that could endanger the land and the water, those responsible must provide for adequate treatment of water or the disposal of waste in suitable places, as well as for the restoration of the dumping areas after use.*"

and:

"*Costs of measures to protect the surrounding area must be calculated at the planning stage and, if the installation is temporary, costs of restoration must be included in the budgets*."

Pros

- The Polluter Pays Principle is, of course, not without a reason. What are the pros of the principle?
  - The polluter is the person who originated the pollution (practical argument).
  - The polluter can or could have stopped the pollution or could have avoided the risk; he is the legal/normative addressee (normative argument, he is "to blame").
  - He is the person who benefited from the polluting activity and/or was able to weigh benefits and damages of his activity (economic argument).
- Depending on the situation and the convictions of the people involved, these reasons get a different shape and weight.
- The principle is well accepted and plays a role in many countries both in the shaping of new laws and in the interpretation of existing laws. Usually it will be clearly discernible in the civil liability system, but also in criminal and administrative law, both national and international.

Limitations

- Unfortunately we also have to face impossibilities while bringing the Polluter Pays Principle in practice: the polluter may be unknown, may have ceased to exist, and may be bankrupt or otherwise not to be held responsible.
- Furthermore it may be impossible to trace the source of pollution or prove the causal relation.
- For pollution in the past, the "time-factor" is important. The above-mentioned impossibilities are more likely to occur as time passes. In addition to this, difficult questions of legal and political nature arise.
- The legal questions are: was pollution already unlawful when the pollution occurred (principle of "lex certa" = legal security) and can the polluter be blamed (culpability)?
- If this is not the case, the political question arises whether it is fair to make the polluter liable retroactively.
- Furthermore in many countries rules of prescription make it impossible to sue polluters many years after the pollution.
- In cases where the polluter cannot be made to pay, the government or damaged parties may try to make other parties pay or clean up.

Can Other Parties be Made to Pay?

- Other relevant parties are the owner, the (long) leaseholder, the mortgage lender, the operator or even the government that permitted the activity.
- The arguments to hold one or more of these parties liable may depend on answers to the following questions:
  - Was there some direct of indirect involvement in the pollution?
  - Did a (relevant) relation with the polluter exist?
  - Did he accept responsibility for the pollution or the polluted site?
  - Did he get benefit from the pollution/polluting activity?
- In case one of the answers is answered positively, this may provide a (sufficient?) basis to make that party pay. More positive answers will provide a stronger base.

Owners Responsibility

- Even in the case where the above-mentioned questions are not answered positively, one may find reasons to make the owner pay or at least force him to take measures to prevent further spreading of the pollution.
- What arguments can be used to support this choice:
  - he had legal authority over the parcel of land during the pollution;
  - he has an interest in a good soil quality and benefits from cleanup measures (increase of the value of the land);
  - he is responsible for all the risks emanating from his property;
  - the party has the possibility and the obligation to prevent the pollution from spreading further or to take protective measures.
- The owner's responsibility is not as widely accepted as the Polluter Pays Principle, but it is in some form or other to be found in many legal systems.
- Different choices can be made as to the extent of the owner's responsibility: has the owner obligations to prevent further spreading of the contamination and/or to clean up the contamination (pays the costs) and/or pays for damages proceeding from the contamination (health damage, production loss)?
- It is important to discuss the relation between the owner's responsibility and the Polluter Pays Principle. Can the owner be held responsible only if the polluter can't be held responsible? And should a distinction be made between an owner who is the polluter in the past but cannot be held responsible (completely) and an owner who has bought the parcel of land knowing of the contamination?

Compensation/Grant

- In all situations where the owner cannot be made to pay fully, government funding to the owner is an option. This can take two forms:
  - funding can be granted to owners that volunteer to do cleanups;
  - the owners may be obliged to carry out the cleanup and a funding scheme is established to compensate for those costs that exceed their own responsibility.
- The funding mechanism may take into account, whether: the owner is to be held responsible for the pollution there are obligations to clean up by civil law (neighbour's), there is profit for the owner (increase in the value of the land) and/or the owner acquired the polluted land knowingly.

Questions:

We think the situation in the different countries may be made clear in case the following questions are answered.

1. What are your comments in general to the thoughts presented in our paper?
2. Is the Polluter Pays Principle an accepted principle in your country; if so, is it a policy principle or a legal principle?
3. Are other parties than polluters also made to pay?
4. If so, which parties and what are the arguments?
5. If more parties are liable does the legislation/regulation provide priority rules between the parties, or can the appropriate government level make a choice in each individual case?
6. What are the arguments for other parties to be taken into account?
7. Do you know in your country an obligation for the owner/leaseholder to clean up or prevent further spreading?
8. Does a grant or compensation scheme for owners or other parties that clean up exist?
9. If so, what are the principles of the scheme?

THE POLLUTER PAYS PRINCIPLE IN THE CZECH REPUBLIC

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The PPP is a part of the updated state environmental policy of the Czech Republic, as well as a real implement component of a number of Czech laws, mainly:

- Law on Waste (No. 125/1997 Coll., as amended);
- Law on Waters (No. 138/1973 Coll., as amended);
- The Clean Air Law (No. 309/1991 Coll., as amended);
- Law on Protection of the Agricultural Land Fund (No. 334/1992 Coll., as amended);
- Law on Chemical Substances and Chemical Preparations (No. 157/1998 Coll., as amended);
- Law on Prevention of Major Accidents (No. 353/1999 Coll.).

Generally, the PPP is applied in each phase of hazardous substances management (transport, storage, treatment, utilization, and disposal…). In case of endangering human health or the environment, or if human health or the environment has already been damaged, the pertinent district authority may ensure remedial measures at the expense of the responsible person. Expenses following from this decision shall be born by the decisive district authority. The person responsible for this illegal activity pursuant to specific environmental law shall be obliged to reimburse to the district authority the costs incurred.

The field of the PPP can be divided in a simple way into four points, as follows:

1. Environmental damages from the past:

   This area includes mainly the privatization process and the activity of the former Soviet Army inside the Czech Republic territory.

   Concerning remediation of the environmental damages solved in the process of privatization, the PPP is used only partially. On one hand, the state as the former owner of the privatized property pays remedial measures via the National Property Fund (NPF). On the other hand, the new owner of the privatized company is legally responsible for the realization of the remedial measures. In the period from 1991 to December 31, 2000, the Government of the Czech Republic confirmed 257 agreement guarantees of the National Property Fund, in the amount of 139.233 bil. CZK; of this number, 240 Environmental Liability Agreements were concluded in this sum.

   The expenses paid until now for remediation of historical damages of the privatized property by the National Property Fund were as follows: 1993 - 9.1 mil. CZK, 1994 - 139.2 mil. CZK, 1995 - 817.7 mil. CZK, 1996 - 949.7 mil. CZK, 1997 - 1 375.3 mil. CZK, 1998 - 2 173.6 mil. CZK, 1999 - 1 758.9 CZK, 2000 - 2 129 mil. CZK. Remediation activities were concluded at 17 sites, 89 cases are continuing.

   Remediation of the environmental damages caused by the former Soviet Army is the example of the PPP absence. Decontamination measures are completely paid from the state budget of the Czech Republic. In 1990 - 2000, the amount provided for the study and decontamination

work on the previous Soviet military bases, including risk analysis and supervision reports, equalled approximately 1 118 mil. CZK. It is expected that it will be necessary to expend a further 320-370 mil. CZK by the year 2008.

2. The second, as well as the simplest version, is the situation when the polluter is known and ensures imposed remediation measures.
3. The polluter is known but he does not want to ensure remediation activities, or he really does not have the finances needed for ensuring the remediation measures (he went into liquidation, problems connected with restitution…).
4. The polluter is unknown:

   Regarding points 3 and 4 pursuant to the updated Water Protection Act No. 254/2001, which is coming into force on January 1, 2002, the Water Protection Authority will open a special account which will be annually complemented up to the sum of 50 mil. CZK for the purpose of accidental endangering surface and groundwater (section 42, part 4).

   Comparing sums of finances needed for remediation measures mentioned under point 1, we can see that the sum of 50 mil. CZK is very low. Unfortunately, no more public funds are available to date.

   The draft of the Law on Environmental Damages - newly called the Law of Identification of Chemical Environmental Damages in Groundwater, Soil, Rocks and Building Constructions and their Remediation is being intensively prepared. This law is supposed to permit more complex conception and solution of the protection of the environment and of human health. In short, the philosophy of this law is, as follows:

   - Each owner of the property in which harmful chemicals listed in the appendix of the Law are used and each owner of land with landfill, are obliged to make the investigation of the sites for these chemicals in groundwater, soil and building constructions;
   - Each owner of the property in which control standards “A” (i.e. background level) are exceeded and risk analysis proves an unacceptable risk for individual human beings or ecosystems, is obliged to remedy the site to cleanup parameters assessed by regional authorities or by the Czech Environmental Inspection (CEI);
   - In this case, the owner is obliged to purchase an insurance against loss and damage due to environmental damages, or the owner is obliged to build up a financial reserve;
   - If the remediation activities cannot be realized according to the cleanup limits due to the lack of suitable technology, or if expenses are too high and inadequate so as to decrease the health risk, compensatory measures can be assessed by the CEI. Compensatory measures have the form of financial payment.

The law proposal should be submitted to the Czech Government and the Parliament next year and is expected to be in force in 2003.

Finances

A general grant or compensation scheme for environmental improvement projects does not exist.

Generally, the most important central source of financing for environmental protection projects is the state budget. It provides subsidies, repayable financial assistance (interest-free loans) and guarantees for commercial credit of environmental protection projects.

The second largest public source of environment expenditures is the State Environmental Fund (SEF). The income of this fund consists of payments for discharging of wastewater into surface waters, charges for withdrawal of groundwater, payments for emission of air pollutants, charges for reclassification of the agricultural land and payments for waste disposal. Other income sources can be subsidies from the state budget, donations, etc.

Towns, cities, budgetary and contributory organizations, as well as business entities can submit requests for support from the SEF. Financial support is provided pursuant to the Directives of the Ministry of the Environment (MoE) and their Annexes, which are annually updated.

The third source is the National Property Fund, which was established pursuant to the Act on Privatization. This is not a state fund, but a part of public budgets. Local budgets constitute another public source for environmental expenditures.

The Phare programs represent a further financial source.

To conclude, I would like to stress that the MoE and the Ministry of Finances are preparing common material, which should progress the area of environmental damage remediation.

THE POLLUTER PAYS PRINCIPLE IN THE UNITED STATES

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August 2001

Introduction

Federal environmental law in the United States is clearly founded upon the principle of polluter pays. The United States' principle remediation statute, the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), better known as Superfund, has a liability scheme that is structured broadly to ensure that any party that caused or contributed to the contamination at a site is liable for its remediation. However, some critics have argued that this broad liability scheme has been used in such a way that it exceeds the bounds of sound public policy. The US Environmental Protection Agency (EPA) has been engaged in a series of reforms in the past six years aimed at implementing the law in a fair manner while maintaining the fundamental principle of "polluter pays."

In the United States, the "Polluter Pays" Principle is grounded more in concepts of fairness and responsibility than in economic theory[1]. Polluter pays is a widely accepted concept, espoused by both major political parties in the United States[2]. It is a mantra for public interest and environmental groups[3]. It is a principle that is generally accepted by the regulated community in the United States, however, they will point out when they believe law and policy has gone beyond the fundamental Polluter Pays Principle and become unfair, inequitable, or punitive in nature. Although the doctrine of polluter pays is not specifically codified in US law, it is a principle that has influenced the development of many of the major US environmental laws including the 1970 Clean Air Act and the 1977 Clean Water Act[4], and, it is very much a part of the CERCLA statute.

CERCLA

CERCLA embraces the principle of polluter pays in two ways. First it seeks to impose liability for cleanup costs on the parties most likely to have been responsible for the underlying pollution and contamination.[5]Additionally, the original CERCLA legislation created a fund of money for EPA to use to clean up sites. EPA's long-standing policy has been that it will use this fund only where no viable parties exist who can conduct or pay for the cleanup. This fund was originally created based on a tax levied on crude and petroleum and certain chemicals and a corporate environmental tax.

However, in 1995, this taxing authority expired and Congress has not reinstated it. As a result, today approximately 50 percent of the money appropriated to EPA each year for the Superfund program is coming from general revenues and the balance in the Superfund trust fund is rapidly dwindling. Public interest groups, such as the Public Interest Research Group (PIRG) feel strongly that fairness dictates the reauthorization of the tax. NGO's such as PIRG argue that it is fundamentally unfair for the taxpayer to foot the bill for these so-called "orphan" sites. However, industry argues that the tax unfairly penalizes them for wastes they did not create. A representative of the petroleum industry stated in congressional testimony in 1999, "this is an appropriate use of general revenues since every segment of society has been responsible for the problem of haz-

ardous waste sites."[6] Some in Industry also argue that the tax is no longer needed because significant progress has been made in the cleanup of the Superfund sites on the national priority list. However, in a recent report, Resources for the Future, a respected Washington think tank, concluded that the funding needed to continue to address Superfund sites would not drop significantly anytime soon.[7]

The liability scheme of the CERCLA is strict, retroactive, and joint and several. This means that a party may be held liable for contamination caused by practices that were completely legal at the time, that occurred many, many years ago, and any single party may be held completely responsible for contamination that it only contributed to in part. Some critics of this liability scheme say it compels not only polluters to pay but "innocent parties" as well. Similarly, it has been criticized as unfair and inequitable both on its face and in its implementation. This line of criticism is not surprising given that the Polluter Pays Principle in the United States is based on concepts of equity and fairness. Of course, equity and fairness can be argued from two perspectives and the regulated community believes that embracing polluter pays means that they too are entitled to a fair implementation of the concept. Much of the reform work done to the Superfund program over the past six years has been focused on assuring that the implementation of the statute is, in fact, carried out in a fair manner.

Allocation of Liability

Frequently at Superfund sites there are multiple responsible parties. At some sites there are hundreds and even thousands of such parties. As previously mentioned, CERCLA imposes joint and several liabilities but it does not contain any provisions on the method for apportioning liability among parties. Likewise, as a general matter, EPA has not established any "rules" for apportioning liability. However, there are some guidelines for some circumstances. For example, EPA does have a policy on how it will divide up the costs of cleaning up old municipal landfills that are releasing contamination. EPA also has a policy and formula for determining the share for contributors of very small quantities of waste to a site (known as de minimis *parties). Within the last five years, EPA has issued a policy on how it will handle the so-called "orphan share" that exists at some sites. The "orphan share" is that portion of liability attributable to parties that are now insolvent or defunct. EPA has also issued a policy that says when it issues a cleanup order, it will issue it to the largest number of liable parties practicable, to address concerns that EPA targeted its orders at the largest or richest companies, ignoring other liable parties.*

Most often the parties at the site get together among themselves to work out the allocation of costs. EPA has experimented with a process for allocation that provides for the use of a neutral facilitator and more governmental involvement but has decided not to adopt such an approach across the board.

Protected Parties

A variety of legislative and policy changes have been enacted to address concerns that the broad, sweeping liability scheme of CERCLA not only means that the polluter pays, but also innocent parties as well. Parties that have been afforded liability protection include:

Lenders	- banks and other lending institutions that become property owners through foreclosures
Municipalities	- who become property owners through liens and foreclosures based on unpaid property taxes
Persons owning property through which groundwater contamination flows	- when the source of the contamination is adjacent property over which the person has no control
Innocent landowners	- providing that certain conditions are met - residential property owners

Similarly, the "*de micromis*" exemption seeks to relieve from liability, parties who contributed minute amounts of relatively innocuous waste at Superfund sites. Finally, there has recently been some legislative debate over providing exemptions from Superfund liability for certain classes of small businesses. In some forms, such an exemption could be viewed as at odds with the Polluter Pays Principle. In fact, some legislative proposals have given small businesses liability exemptions, presumably for economic reasons, without regard to the quantity or nature of waste they contributed. Other versions of legislative drafting have taken a more considered approach exempting small businesses only when they contributed relatively harmless municipal-type waste. These exemptions and exclusions are discussed in more detail below.

Lenders

On September 30, 1996, Congress amended CERCLA by enacting the lender and fiduciary liability amendments.[8] Essentially, the amendments exempted from Superfund liability, that held "*indicia*" of ownership primarily as a means of protecting their security interest in the facility (i.e. lenders foreclosing on properties held as security for loans in default). However, in order to avail themselves of the exemption, lenders are precluded from participating in the management of the facility. In other words, the exemption does not extend to lenders who exercise decision-making control over environmental compliance related to the facility or lenders that exercise control comparable to that of a manager of the facility.

Involuntary Acquisitions by Government Entities

In 1992, EPA, by rule, exempted from Superfund liability government entities who involuntarily acquired contaminated properties most commonly as a result of liens placed on property for unpaid real estate/property taxes.[9] Originally prompted by fairness concerns, this policy has been a critical element of the Brownfield program in the US.

Innocent Landowners

CERCLA contains a defense to liability for certain classes of landowners, commonly called the "innocent landowner defense".[10] To assert this defense, a landowner must show that he took adequate precautions against the acts of the party causing the contamination and that he exercised "due care" with regard to the hazardous substances involved. This is a fairly difficult

burden of proof for the landowner who must establish that when he purchased the property, he made “all appropriate inquiry” into the property’s previous ownership and use.

Residential Property Owners

By policy, EPA will not hold liable, owners of residential property unless his activities lead to the release being addressed under Superfund.

Contaminated Aquifer Policy

In 1995, EPA issued a policy indicating that it would not pursue as liable, parties that own property that contain an aquifer contaminated by a source or sources outside their property. Although not codified into law, this doctrine is generally well accepted as sound public policy, consistent with the concept of polluter pays.

De micromis

CERCLA Section 122 contains a provision for expediting *de minimus* settlements. That provision states that whenever practicable, EPA should promptly reach final settlement of liability with parties that made minimal contributions of hazardous substances to a Superfund site. Minimal is defined both in terms of total volume of hazardous substances contributed and the toxicity of substances contributed. EPA took this one step further by creating what is called the de micromis exemption. In 1996, EPA issued a guidance stating that it would not hold liable private parties who contributed < .002 percent of the total waste volume or 100 gallons of material containing hazardous substance to the Superfund site (or if the contributors only sent municipal solid waste, < .2 percent of the total volume). This exemption from liability applies based on the amount and nature of the waste contributed to the site, not with regard to the nature of the party contributing the waste. Thus, large corporations that contributed only minute amounts of material to a site are eligible for this exemption. In essence, this guidance suggests a floor for what EPA will consider a polluter for purposes of implementing the polluter pays doctrine. It is based on the premise that some contributions to the contamination are of such a minor nature that they do not merit inclusion in the liability scheme.

Small Business

In recent years, Congress has made several attempts to reform the liability scheme of CERCLA. One area commonly considered for reform is some form of liability exemption for small businesses. In some draft bills this exemption would have been provided based solely on the size of the business causing or contributing to the pollution. Historically, EPA has opposed outright exemptions for small businesses because they are contrary to the concept of polluter pays. More recently, Congress has introduced legislation to exempt generators and transporters of hazardous substance if the total material contributed with less than 110 gallons, thus codifying EPA’s *de micromis* exemption. This bill also exempts residential property owners, small business owners and small non-profit entities when the waste they disposed at a Superfund site was solely municipal solid waste.[11] This legislation has been supported by EPA’s Administrator, Christie Whitman. Whitman, endorsing the legislation, stated “this measure will promote cleanup and reduced maintenance costs by drawing a bright line between large contributors of toxic waste and small businesses that disposed of small amounts of waste or ordinary trash”.[12]

Superfund Recycling Equity Act

On November 29, 1999, Congress amended CERCLA to exempt from liability certain parties that send materials for recycling. The policy rationale behind the exemption was to promote legitimate recycling. However, its implementation has raised the difficult question that arises with any exemption, i.e. if some parties are exempted from liability, who is left to pay their share?

Other Issues

At the federal level there is no general obligation for owners of property to clean up or prevent further spreading of contamination. However, there is significant incentive for property owners to do so in order to enhance the value of their property and avoid future liability under Superfund or analogous state laws. In addition, some states within the United States do impose an obligation or duty to assess for possible contamination, and remediate if necessary, at the time industrial property is transferred.[13] A significant movement is underway in the United States to voluntarily clean up many contaminated properties. In what is known as the Brownfield program, many cleanups are being done based on the owner/operator's own initiative either with no government involvement or under state voluntary cleanup programs. Most state voluntary cleanup programs charge a small fee, include general cleanup standards, provide some minimal level of oversight of the cleanup and provide the property owner with a liability release. In support of the Brownfield program, EPA has developed an extensive grant program whereby monies are provided, usually to local government, to assess the extent of contamination at properties. Over 400 of these grants have been given over the eight years that the program has been in effect. Each grant is for up to $200,000. In addition, EPA maintains a revolving loan fund from which loans can be made to property owners to conduct cleanup activities. This is the extent of the grant or compensation scheme that exists under federal law in the United States. However, there are private rights of action under the CERCLA and other waste statutes that allow parties that conduct a cleanup to sue other parties who contributed to the contamination. This so-called "third party" litigation is quite common in the US. In addition, some states such as New Jersey have reimbursement schemes. New Jersey's Brownfield Site Reimbursement Fund provides reimbursement for up to 75% of the cost of remediating contaminated property, provided that the developer agrees to "redevelop the property."[14] There is no right to reimbursement, but rather it is discretionary on the part of the state in consideration of factors like: the economic feasibility of the project, the necessity of the grant to the viability of the project, and the degree to which the project will advance governmental planning and development objectives.

State Liability Schemes

Virtually all states have their own state laws and authorities that they can use to order parties to clean up contaminated sites. Ever increasingly, state statues do not have the same liability scheme as federal remediation statutes. For example, Michigan and Illinois both have laws that provide that an owner or operator are liable only if they caused or contributed to the release of the contaminants. This type of liability standard places an additional burden of proof on the governmental entity. Illinois and other states also have proportional liability schemes; i.e. a party can only be held liable for their "share" of the contamination. One state, Minnesota, has specifically rejected the "polluter pays" approach for municipal waste landfills requiring remediation. Under the state's "Closed Landfill Program", the state performs cleanup actions, takes over the long-term operation and maintenance of the remedy and reimburses eligible parties for past cleanup costs. State officials have said that it is preferable that the cost of addressing the

problems of closed landfills be viewed as a societal cost, and believe that the CERCLA "polluter pays" approach does not work well for most landfills where a large portion of the waste comes from many small businesses and households.[15]

Conclusion

It's fair to say that CERCLA has a very broad liability scheme that can readily be used to assure that the polluter pays. However, its broadness also creates a real or perceived opportunity to apply it in a way that goes beyond many people's view of polluter pays. Legislative and administrative reforms have been put in place to limit, define or constrain CERCLA's liability scheme.

1. Nash, Jonathan Remy, "Too Much Market? Conflict Between Tradable Pollution Allowances and the Polluter Pays" Principle, The Harvard Environmental Law Review. Vol. 24, pages 476-478 (2000).
2. See, Falka, John J. "Koch Industries to Pay $30 Million Fine," Wall Street Journal, Jan. 14, 2000 at A6 quoting then EPA Administrator Carol Browner "It's this simple: You pollute you pay" and "Whitman: Superfund Tax Faces Rejection," Green Bay Press-Gazette, July 10, 2001 quoting EPA Administrator Christie Whitman "We still believe polluters ought to pay."
3. See, Banner on US Public Interest Research Group (PIRG) website, www.pirg.org/enviro/Superfund "Make Polluters Pay!"
4. See Nash, Supra footnote 1 at page 471.
5. See CERCLA §107 (identifying parties potentially liable under CERCLA).
6. See "Whitman: Superfund Tax Faces Rejection," Green Bay Press-Gazette, July 10, 2001, quoting Red Cavaney, President and CEO of the American Petroleum Institute.
7. Probst Katherine N. and Konisky, David M., "Superfund's Future, What Will it Cost" Resources for the Future (2001).
8. CERCLA §101(20)(A).
9. This rule was later codified in CERCLA §101(20)(D) and 101(35)(A).
10. CERCLA §107(B) and 101(35).
11. See HR 1831, passed unanimously in the US House of Representatives on May 22, 2001.
12. EPA Headquarters Press Release, May 16, 2001.
13. See New Jersey's Industrial Site Recovery Act (ISRA), N.J. Stat. Ann. Sec. 13: 1K et seq. (formerly named the Environmental Cleanup and Responsibility Act (ECRA)).
14. See Environmental Opportunity Zone Act, N.J. Sta. Ann Sec. 54:4-3, 151. See also, McGahren, John and LeJava, Jeffrey P., Brownfield Redevelopment in the Garden State, Natural Resources and Environment, page 224, Spring 2001.
15. US General Accounting Office, Hazardous Waste Sites State Cleanup Practices.

POLLUTED SITES: WHO MUST TAKE MEASURES AND WHO HAS TO PAY FOR THEM? – THE SITUATION IN SWITZERLAND

Speaker: ***Mr. Siegfried Lagger***
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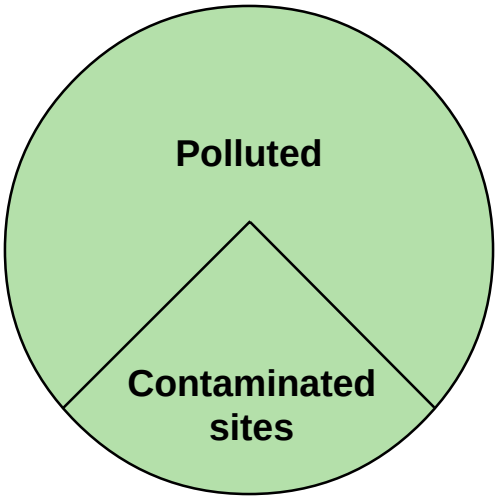

Outline

1. Introduction
2. Who takes the measures?
3. Who bears the costs?
4. The federal government's funding solution
5. Conclusions

Who has to take the measures?

- The holder
- A third party:
  - preliminary investigations, monitoring or detailed investigation if there is a reason to assume that the pollution was caused by their behaviour;
  - remediation project and remediation if it is certain that the pollution was caused by their behaviour.

Who has to bear the costs?

- The polluters:
  - persons responsible by their behaviour
  - persons responsible by virtue of their position (holder)
- If several polluters are involved:
  - Persons responsible by behaviour are primarily responsible.
- Correction criteria:
  - reasonableness and equity

Conclusions

- System should guarantee that the measures are taken quickly;
- the aim is a fair distribution of costs and an internalising of environmental cost;
- rapid remediation of polluted sites, by means of a funding solution.

The federal government's funding solution

- Tax on the deposit of waste (since January 1, 2001)
- Using the proceeds from the tax for contribution to the cantons for remediation
- 40 percent of the remediation costs

POLLUTER PAYS PRINCIPLE IN HUNGARY

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According to Act. No. LIII. of 1995, on the General Regulation Concerning Environmental Protection section 101 (2) anyone pursuing an unlawful activity shall be obliged to:

a) terminate the threat to and the pollution of the environment, and to put an end to damaging the environment;

b) bear responsibility for the damage caused; and

c) restore the state of the environment that prevailed before the start of the activity.

According to section 102:

(1) for unlawful activity joint and several responsibility shall be born by the owner and holder (user) of the property on which the activity is being or has been pursued.

(2) The owner shall be exempt from the joint and several responsibilities when the owner gives the name of the actual user of the property and proves without doubt that the liability does not fall on him (the user).

As it can be seen from Act No. LIII of 1995, in Hungary the polluter bears responsibility for the damage caused by him. However to find the polluter and enforce him to be responsible for the cleanup of the pollution is, in many cases, very difficult.

First of all, in many cases, the polluter cannot be found, because *the pollution is "old" and the polluter is unknown or already doesn't exist*. According to present legislation, it is the responsibility of the government to address the consequence of significant environmental damage if no other party can be held responsible. The 1991, Short- and Medium-Term Environmental Action Plan identified the task of remediating sites with accumulated environmental pollution. Two types of sites were distinguished: abandoned Soviet Army facilities and other "inherited" contaminated sites.

Some 175 former Soviet military facilities were registered during a control programme carried out by the Ministry for Environment between 1990 and 1995. The state Privatisation and Holding Company provided financial resources. Remediation of the worst polluted of these has been completed.

Remediation of other "inherited" contaminated sites did not begin until 1996, due to lack of resources. In 1997, the Hungarian Environmental Cleanup Programme was launched to make up for this delay. During preparation of the Programme, information on the most serious pollution and other environmental damage was collected. About 200 sites were registered. The estimated total cost of their cleanup is approximately HUF 40 billion. In each of the Environmental

Cleanup Programme's first two years, the annual budget allocated HUF 1 billion to the Central Environmental Protection Fund for implementation. Funds have been provided from privatisation revenue.

By mid-1997, diagnostic investigations had been completed at 15 sites and emergency measures taken at eight of them. The Programme's medium-term phase will cover the years 1998 to 2002. During this phase, subject to availability of financial resources, diagnostic or partial investigations will be carried out at the 200 sites for which the government is responsible.

In other cases *the polluter is known and ready to clean up contamination caused by him*. There are some large-scale remediation programmes in Hungary such as the Cleanup Programme of

the Hungarian Railway Company, Military Cleanup Programme, Mining Structure Conversion Programme, etc. In these programmes, the polluter finances the cost of the cleanup programme without enforcement.

The third version when the polluter *is known but not willing to cleanup the contamination caused by him*. In this case, legal enforcement is the only way to carry “Polluter Pays Principle” into effect. From 1990, 12 Regional Environmental Protection Inspectorates were established. The Inspectorates have first order jurisdiction in regard to a range of environmental issues, among them remediation of contaminated sites. The second order, environmental and nature conservation jurisdiction is done by the National Inspectorate for Environment Protection and Nature Conservation. The Inspectorates are organisations, which enforce the polluters to clean up the contamination caused by them. If the polluter does not agree with the content of the decision of the Inspectorate, he can appeal to the County Court, as a first instance court, and then to the Supreme Court, as a second instance court. It means that the enforcement process can last several years and during this period no cleanup action is done. In case of an emergency, the Inspectorate has the legal right to start with the cleanup of the contamination immediately and the cost of the work is later charged to the polluter.

In certain cases, the owner of the contaminated site can be involved in the cleanup process as it is written in Act No. LIII of 1995 section 102. If the polluter is not known or bankrupt, then the owner of the site is responsible for the remediation.

Additional questions

I have some questions on what you have written:

1. When is an activity considered as unlawful; when it was expressly forbidden or also when it was negligent?
2. Is the owner always liable in the case when he fails to give the name of the user, or only in the case when he acts unlawfully himself?
3. Is the polluter also liable for contamination that was caused before the Act came into force and/or before 1989?
4. Is the enforcement by the Inspectorate required when the pollution was caused by an unlawful act?
5. At the end of your paper you write that the owner is responsible if the polluter is not known or bankrupt. Is it the same kind of liability as in the beginning of your paper or is it something else?

Answers to the questions by Zsolt Horvath

1. The activity is unlawful if it is against the law. It can be when the activity is forbidden or in the case of negligence.
2. The owner is liable if he fails to give the name of the site’s user, or if he has acted unlawfully himself (he is the polluter).
3. The polluter is liable for the contamination only after the Act came into force in 1996, but earlier another additional Government Decree for hazardous waste came into force in 1991, which also dealt with the liability of the owner of the pollution.
4. Yes. The Inspectorate can enforce the cleanup when the pollution is against the law.
5. No. It is the same. I wanted only to stress that in Hungary not only the polluter, but the owner of the site is also responsible for the cleanup. So here, we have the Owner Pays Principle too.

THE EVOLUTION OF THE POLLUTER PAYS/OWNER PAYS PRINCIPLE IN RELATION WITH THE REHABILITATION OF CONTAMINATED SITES IN CANADA AND THE UNITED STATES

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Canada

The Initial Step: the United States Comprehensive Environmental Response Compensation and Liability Act[1]

In North America, the very first political attempt to clearly identify "potential responsible parties" in cases of soil contamination was done by the US Environmental Protection Agency (EPA) in 1980. Following the social trauma of Love Canal, the Federal government promulgated in 1980, the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) and the Superfund program. This was aimed to identify, assess and clean up the worst polluted hazardous wastes sites in the country. The Act identifies the "potentially responsible parties" liable for all costs of removal or remedial action and damages resulting of a release as:

(1) the owner and operator of a vessel or a facility;

(2) any person who at the time of disposal of any hazardous waste owned or operated any facility at which such hazardous substances were disposed of;

(3) any person who by contract, agreement, or otherwise arranged for disposal or treatment, or arranged with a transporter for transport for disposal or treatment of hazardous substances owned or possessed by such person, by any other party or entity, at any facility or incineration vessel owned or operated by another party or entity and containing such hazardous substances;

(4) any person who accepts or accepted any hazardous waste substances for transport to disposal or treatment facilities, incineration vessels or sites selected by such person, from which there is a release, or a threatened release which causes the incurrence of response costs, of a hazardous waste.

As we can see, in the United States, at the federal level, polluters and owners, former and actual are targeted since the very beginning as "potential responsible party". Many other persons (transporters, disposal site owners, etc.) are also identified as "potential responsible party"; the government being free, at will, to target among all those persons the one(s) it wishes. Time factor (when did that happen?), and the state of the legislation (was that legal, or, better stated, regulated when it happened?) do not play any role. Moreover, as EPA did not adopt any use-based generic criteria, there is, theoretically, no "safe haven", a reached level of cleanup exempting the responsible party from any future liability. In clear, theoretically, liability may exist until the last molecule of contamination is cleaned up. Finally, the polluter keeps forever the liability for the waste he has generated. Even if it has been disposed away in a government-

1 For a deeper analysis of the EPA and US policies, you are invited to read Susan Bromm's paper: The Polluter Pays Principle in the United States.

accredited landfill, the generator of the waste or contaminated soil for example, could be summoned to contribute to the cleanup of this new site if it ever leaked. This is an extreme application of the Polluter Pays Principle (when the polluter's liability for its waste is going on as long as the waste [contamination] exists).

In the Anglo-Saxon legal tradition, CERCLA did not limit itself to state a general principle but also tried to circumvent very precisely who is targeted and who is not. Thus, for example, there is a definition of the term owner and operator and, it is specified that it does not include, among others, a person, who, without participating in the management of a vessel or facility, holds *indicia* of ownership primarily to protect his security interest in the vessel or facility.

Over the years, some groups lobbied to ease up the pressure, real or apprehended that CERCLA was having on them. The bankers were quite successful at it, in 1996; Congress adopted the "Asset Conservation Lender Liability and Deposit Insurance Protection Act" which restricted significantly the lender's liability.

In the wake of CERCLA and Superfund, in the 80's, many US states adopted their own regulation on Hazardous Waste Sites. As we will see later, the states were some years later confronted to other aspects of the contaminated soil problem, which led them to adapt their regulation and set up new programs for restricting liability.

The Canadian Dynamic

The Canadian dynamic was different than the US one. Instead of having a federal (central) government-driven process, Canada had a province- (regional) driven process. Another difference with the US is that there are two different law regimes in Canada inspired by two different legal cultures, the Anglo-Saxon "Common Law" approach[2] for the English-speaking provinces (and the US) and the Romano-Germanic "Civil Code" approach [3] in Québec (unknown in the US). We will see later that this cultural difference has an impact when the time comes to define who is a responsible party. It would be interesting to know if a similar distinction exists in Europe.

The Canadian federal government did not elaborate anything equivalent to Superfund or CERCLA. It did not pass any laws or regulations concerning contaminated sites and did not try to legally decree on who was liable, this all being a provincial responsibility. Each of the 10 provinces was then free to elaborate their own definitions and rules. That's exactly what some of them did. This led to some noticeable differences that can be appreciated in the following pages and in Appendix 1.

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[2] Common Law evolved from a tradition where cumulative court decisions should constitute the Law (Common Law). So in a way, it is the judges' decisions that are slowly building up the law, stone-by-stone, decision-by-decision. In such a system, a government Act and a case is brought to court, the judges will tend to interpret literally and strictly the contested Act and assume, if something is not expressively mentioned in it, that it is not covered. Thus, when the government proposes an Act, it must try to list as extensively as possible all persons and situations targeted as well as all possible or envisioned exceptions, a difficult and spiralling task.

[3] In Romano-Germanic tradition, unlike in the Anglo-Saxon tradition, the population waits for the government to set-up a codified set of rules, the "Civil Code" which forms the basis of the whole legal system. The court is there not really to "build up" the law through its judgements, but to clarify the Code. Judges will basically try to understand the legislator's intentions, to go beyond the letter. In such a system, laws are written in more general terms, giving the broad intention of the legislator. If necessary, the judges will interpret and clarify them.

Canadian English-speaking Provinces: the Common Law Approach

In the 90's, many of the English-speaking Canadian provinces adopted their own contaminated land laws and regulations and identified the potentially liable parties. In accordance with the Anglo-Saxon legal tradition, the sections of the laws dealing with liability are extensive as they include a long list of who should and should not be held potentially liable, with many exceptions and particularities. Even if there are some differences, a review of the laws adopted by the four main English-speaking provinces, British-Columbia (BC), Alberta (Alta), Manitoba (Man.) and Ontario (Ont.), shows great similarities, the most striking being:

- All of them identify past and present polluters as well as actual or former landowners (BC, Alta and Man.) or contaminants owners (Alta, Man. and Ont.) as potentially liable. So, both principles, polluter pays and owner pays apply. There is no time factor considered or concern for the legal context at the time the land was contaminated.[4]
- Other parties, like operators, carriers, managers, etc. may also be held liable.
- There is no priority rule. Each provincial government is free to pick up, in any order, as many or as few liable parties as it wishes.
- There are many circumstances under which an owner may get discharged of its liability. Although those circumstances are not the same in all regulations, they are precisely described in each of them.

A brief summary of each of the regulations adopted by the four English-speaking provinces can be found in Appendix 1.

Québec: the Romano-Germanic Approach[5]

First adopted in 1972, the Québec Environment Quality Act *included a general article prohibiting the emission of pollutants in the environment, which has been used against the polluters in the soil rehabilitation context .*[6]

Besides this article aimed at the polluter, Article 114.1 of the same law is targeting the owner in the case of an emergency. [7]

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[4] Though Alberta is opening a door in this direction when it states in its Act that the government before taking an order should give consideration whether a person dealing with the substance followed accepted industry standards and practices in effect at the time or complied with the requirements of applicable enactment in effect at the time.

[5] The Québec situation is discussed extensively in Michel Beaulieu's paper *Polluter Pays Principle versus Owner Pays Principle: The Situation in Québec.*

[6] Article 20 states that:

"**No one may** emit, deposit, issue or discharge or allow the emission, deposit, issuance or discharge **into the environment of a contaminant in a greater quantity or concentration than that provided for by regulation of the Government (to date, no specific regulation was adopted defining acceptable soil contamination level).**

The same prohibition applies to the emission, deposit, issuance or discharge of any contaminant the presence of which in the environment is prohibited by regulation of the Government or is likely to affect the life, health, safety, welfare or comfort of human beings, or to cause damage to or otherwise impair the quality of the soil, vegetation, wildlife or property".

[7] "Where he considers that there is urgency, the Minister may order **any person or municipality being the owner of certain contaminants or having had the custody or control thereof**, to collect or to remove any contaminant dumped, emitted, issued or discharged into the water or onto the soil, accidentally or contrary to the provisions of this act or the regulations of the Government, and to take the measures required to clean the water and the soil so that these contaminants cease to be spread or to propagate in the environment".

However, it was only in 1990, that articles aimed more specifically at soil contamination were added to the law. Bill 65, nicknamed the "Polluter Pays Bill", gives the Minister the power to order assessment and cleanup of contaminated sites to whoever has emitted, deposited, released or discharged contaminants[8]...

So, since 1990, the Québec legislation is clearly focussing on the polluters. The owner or the person having had the custody or control of the contaminants may also get an order, but only in case of an emergency (impact on the environment or significant risk to human health or the environment). Clearly, actually, the owners, past and present, are much more at risk in the other Canadian provinces and in the United States then they are in Québec, but this should change soon, as the law should be modified by the end of 2001.

The proposed modifications would give the Minister the power to order assessment and cleanup of any sites contaminated above regulated criteria or causing an impact on health or the environment. The targeted person could be anyone who, even before the adoption of the new provision:

- emitted, deposited, issued or discharged or allowed the emission, deposit, issuance or discharge into the environment, in part or in totality, of the contaminants (the polluter);
- has or had the land custody, as owner, tenant, or any other titles.

Orders could not be taken against someone able to demonstrate that:

- he did not know nor had no reason to suspect that there were contaminants on the land;
- he acted with all the care and haste necessary to prevent that the contaminants found in the land did, notably through migration, impact the environment including human beings;
- he demonstrated that the contaminants found in the land migrated from another land and originated from a third party.

As we can see, in this new regulation, past and present polluters and owners are potentially liable parties, there is no time limit or concern for the legal context at the time the land was contaminated. According to the Romano-Germanic legal tradition, the formulation is kept concise and general and, unlike in other Canadian or US jurisdictions, there is no extensive listing of who is, or is not liable. It is interesting to note that it is not the owner who is specifically targeted but the person having the "land custody", including, but not restricted to the owner.

United States: The States' Concerns over Unlimited Liability[9]

As we saw before, CERCLA was originally designed by Congress to solve the "worst" priority list cases. At the beginning of the 80's, no one suspected that contaminated sites would suddenly appear by the tens of thousands, and that, more often than not, the contamination would be minor, compared to what was found on the first sites registered in the Superfund Priority List. As the EPA and the lawyers focussed on the worst, the next level of government, the States,

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[8] *Article 31.42 of the* Environment Quality Act *states that:*

"Where the Minister believes on reasonable grounds that a contaminant prohibited by regulation of the Government is present in the environment or that a contaminant present in the environment is likely to affect the life, health, safety, welfare or comfort of human beings, or to cause damage to or to otherwise impair the quality of the soil, vegetation, wildlife or property, he may issue an order to the same effect to whoever has emitted, deposited, released or discharged, even before 22 June 1990, all or some of the contaminant.

Article 31.43 gives the Minister the power to order the cleanup of the site to the same people in the same circumstances".

[9] *For a deeper analysis of the EPA and US policies, you are invited to read Susan Bromm's paper*: The Polluter Pays Principle in the United States.

became more and more confronted with less glamorous but much more common, “minor” sites.[10] At the beginning of the 90’s, this became to be known as the “Brownfields” issue. Soon, this issue overshadowed for many states and cities the Superfund issue. The states and some former industrialised cities (like Chicago and Detroit) were the first in the US to fully feel the social and economic meanings of having thousands of derelict pieces of properties scattered around, properties that no one, including would-be developers and lenders, wanted to be involved with. Some areas, the Great Lakes for example, were, due to their industrial past, more impacted than others. It is not surprising to see that the drive to modify the rules and restore the Brownfields to more productive use came from this direction.

Trying to find a solution to a very concrete problem, the states had first to identify its roots. It soon became clear that the way CERCLA was defining liability, unlimited, unrestricted and almost without possible end, was one of the main reasons invoked by many would-be developers and financiers to stay away from Brownfields. In EPA’s view, this fear was definitively based on perception, not reality, as there were virtually no cases of EPA using CERCLA to go after an owner or developer after they voluntarily cleaned up a site. Still, in some cases, this paranoia went so far that owners/polluters decided that it was safer for them to mothball their sites, even prime sites, instead of selling to would-be developers, afraid that if something went wrong with the developer, they could always be held liable for any damage and further cleanup, notwithstanding any partial cleanup or agreement they may have done or ratified in the past. In clear, the development could not be set in motion because the potential developers, the polluters, the owners and the bankers were afraid of real or presumed potential liability or, as some stated, were using that argument to justify doing nothing.

To foster site cleanup and reuse, some states decided to propose new “softer” liability rules, setting up use-based generic cleanup criteria and, for non-priority list sites, a voluntary cleanup process, leading under certain conditions, to a liability release. Still, developers were afraid of potential federal liability even in case of states’ sign off. The states engaged with EPA regional offices to better define which universe of sites, EPA was concerned with and which it was not, and in some regions, agreements were signed. Over the years, EPA itself became more and more aware and active on the Brownfields sites scene and did a number of steps to address the concerns raised by the states and foster reuse.

The review of the State’s Brownfields Legislation and Programs and their impact on the liability is beyond the scope of this work. I will only mention the following three major elements underlying those programs:

- They are voluntary programs. Site owners or polluters freely adhere to the programs when they feel it is in their interest.
- Owners or polluters mostly join the programs when they plan to sell or reuse the contaminated site. Potential redevelopment, associated fear of liability and some governmental acquiescence are the key elements pressing them to join.
- Liability restriction or release is one of the main reasons for the polluter or owner to join the program and it is, under strict conditions, clearly given by the authorities. Meanwhile, the governmental sign-off documents include many reopeners (for example: liability release could be withdrawn if the planned use is changed or if undiscovered contamination is later found).

[10] Some of those sites are still as large as the biggest National Priority List sites!

Summary

There is a significant unity in the way potential responsible parties are defined and dealt with in the Canadian and United States legislation. Thus:

- for years, Polluter and Owner Pays Principle are both equally applied (Québec is an exception, actually targeting mostly exclusively the polluter, but this should change soon);
- past and present polluters and owners are both potentially liable (there is no time limit);
- there is no concern for the legal context at the time the land was contaminated (except in Alberta where it is stated in the law that the Minister should give consideration, before issuing an order, to whether the person dealing with the substance followed accepted industry standards and practice in effect at the time, or complied with the requirements of applicable enactment in effect at the time);
- many other parties (operators, carriers, trustees, etc.) can also be designated as responsible parties;
- there is no priority system and the authorities are free to pick, at will, the one(s) potential liable party (ies) they wish;
- there is a trigger defining when government may order the assessment or cleanup of a site. It is mainly when there is an impact or serious risks to human health or to the environment;
- with the aim to facilitate and increase the reuse of contaminated sites, there is a clear trend over the last years, under certain well defined conditions (clean up to generic level, government-approved risk assessment and management measures, transfer to authorised treatment or landfill centres, etc.) to find ways to restrict or put an end to the polluter or owner's (present and future) liability or allow liability transfer from one party to another (many US States, Ontario and Québec).

Some differences are meanwhile noticeable:

- unlike in Canada where the process was province-driven, the federal government played a major role in the United States in helping to define who is potentially liable;
- in some aspects, US CERCLA liability is stricter than what can be found in Canadian legislation. For example, in Canada, unlike in CERCLA, a polluter or an owner will lose any liability it had on a contaminated soil if he excavates it and sends it to an authorised contaminated soil landfill or treatment plant;
- in the Anglo-Saxon legal tradition, the government is compelled to detail *in extenso*, who could be held liable as well as any possible exceptions. The results of these difficult and spiralling tasks is that, for example, the term owner defines a very different group of persons, depending on which country or province you are in. So, behind apparent unity (owners are liable), hide considerable differences. In this aspect, the province of Québec singularises itself. By reason of its Romano-Germanic legal tradition, Québec does not have any extensive listing and defines potential responsible parties only in general terms, using the concept of "person having land custody".

Appendix 1: Liability in the English-speaking Canadian Provinces

British-Columbia

To date, *British-Columbia Waste Management Amendment Act* (1993) is the most extensive Canadian piece of legislation on contaminated soil. A large section of it describes liability and who is a potential responsible party. It is largely inspired from the US CERCLA. As in the US, it sets, as a general principle, that a "*person who is responsible for remediation at a contaminated site is absolutely, retroactively and jointly and severally liable to any person or government body for reasonably incurred costs of remediation of the contaminated site, whether incurred on or off the contaminated site*" (p. 14, article 20,41 (1)). It also states that this liability applies notwithstanding:

(a) *that the introduction of a substance into the environment is or was prohibited by any legislation if the introduction contributed in whole or in part to the site becoming a contaminated site.*

(b) *the terms of any cancelled, expired, abandoned or current permit or approval or waste management plan and its associated operational certificate which authorises the discharge of waste into the environment. (p. 15 article 20.41 (3)).*

As in the US, the definition of a potentially responsible person is broad and includes a current and previous owner or operator of the site, a polluter, a carrier, etc. (see table 1). It is interesting that there is also a very extensive section about who is not liable, (it takes four times more space as the space needed to define who is liable!) a particularity, as noted before, of the Anglo-Saxon legal concept. Among the non-responsible person, there is a person who will become responsible only because of an act or omission of a third party, a government body that involuntary acquires an ownership interest, a secured creditor who acts primarily to protect a security interest and so on.

Alberta

In its *Environmental Protection and Enhancement Act* (1992), Alberta defines when the government may issue an environmental protection order to a person responsible for the contaminated sites and who is considered a responsible person. The responsible person is:

(i) the **owner and previous owner** of the substance or thing ("*thing*" could be the piece of land);

(ii) every person who has or has had charge, management or control of the substance or thing, including, without limitation, the manufacture, treatment, sale, handling, use, storage, disposal, transportation, display or method of application of the substance or thing;

(iii) any successor, assignee, executor, administrator, receiver, receiver-manager or trustee of a person referred to in sub-clause (i) or (ii), and

(iv) a person who acts as the principal or agent off a person referred to in sub-clause (i), (ii) or (iii).

Unlike in British-Columbia, formal exceptions are limited and are: a municipality who gains possession of a piece of land because of tax arrears and a person who investigates or tests a parcel of land for the purpose of determining the environmental portrait of that parcel. Meanwhile, it is also stated that, prior to issuing an order to a responsible person, the Minister **should give consideration** to many factors such as:

(a) when the substance came present in, on or under the site;

(b) in the case of an owner or previous owner:
- whether the substance was present in, on or under the site at the time that the person became an owner,
- whether the person knew or ought reasonably to have known that the substance was present in, on or under the site at the time that person became an owner,
- the price the owner paid for the site and the relationship between the price and the fair market value of the site, had the substance not been present in, on or under it;

(c) whether the person took all reasonable care to prevent the presence of the substance in, on or under the site;

(d) whether a person dealing with the substance followed accepted industry standards and practice in effect at the time or complied with the requirements of applicable enactment in effect at the time.

Manitoba

Manitoba defines who is a potentially responsible person in the Contaminated Sites Remediation *and Consequential Amendments Act adopted in 1996. Among others, the following persons may be held responsible for the remediation of a contaminated site:*

(a) an owner or occupier of the site;

(b) a person who was an owner or occupier of the site at a time when the contamination occurred or at any time thereafter;

(c) a person who owns or has possession, charge or control of a contaminant of the site;

(d) a person who owned or had possession, charge or control of a contaminant of the site immediately before or at the time of its release;

(e) a creditor of a person referred to in clause (a), (b), (c), (d) or (j) in respect of the site, if the directors believe on reasonable grounds that the creditor contaminated the site;

(f) where a person referred to in any of clauses (a) to (d) is a corporation, an individual who
- was a director or officer of the corporation at the time of the release of a contaminant at the site, and
- by any act, omission, direction or authorisation occurring after the coming into force of this section, contaminated the site;

(g) a particular person who acted as principal of another person referred to in any clauses (a) to (e) who, in the course of carrying out his or her responsibilities as agent for the particular person, contaminated the site;

(h) a person who
- contaminated the site, or
- being in a position to influence, control, direct or manage another person, directed, required or authorised any act or omission by which a person contaminated the site;

(i) a trustee, receiver or receiver-manager of a person referred to in any clause (a) to (j).

The list of persons not responsible for remediation is even more extensive and includes among many others:

(a) the person who is or was an owner of a land that was contaminated by reason only of the migration of a contaminant from another land not owned or occupied by the person and, where the contamination of the person's land occurred before he or she became an owner or occupier of the land, the person was not aware of the contamination and could not reasonably have been aware of it at the time of becoming an owner.

The person could also be exempted as a minor contributor if in the Minister's opinion:

(a) the person
   - did not contaminate a site or,
   - made an insignificant contribution to the contamination, and

(b) if the person is a present or former owner or occupier of the site, the person has not derived, and cannot reasonably be expected to derive, an economic benefit from:
   - any purchase or sale of an estate or interest in land that includes all or any part of the site or,
   - the remediation of the site,

having regard to the consideration paid or payable by the person for his or her interest in the site and the impact of the contamination and subsequent remediation on the fair market value of that interest.

Ontario

Ontario, the most densely populated Canadian province did not until now go as far as its Western counterparts to define whom may be a potentially liable party. In accordance with the Polluter Pays Principle, section 17 of the *Ontario Environmental Protection Act* (1990) stipulates that:

"*Where any person causes or permits the discharge of a contaminant into the natural environment, so that land, water, property, animal life, plant life or human health or safety is injured, damaged or endangered, the Director may order the person to:*

(a) repair the injury or damage;

(b) prevent the injury or damage;

(c) where the discharge has damaged or endangered or is likely to damage or endanger existing water supplies, provide alternate supplies".

Owners are not forgotten as section 18 of the same Act says that "*the Director by written order may require a person who owns or owned or who has or had management or control of an undertaking or property to take all steps necessary so that procedures specified in the order will be implemented in the event that a contaminant is discharged into the natural environment from the undertaking or property".*

On May 17, 2001, to foster contaminated sites redevelopment, the Ontario Minister of Municipal Affairs and Housing introduced Bill 56 entitled the Brownfields Statute Law Amendment Act*, which aims to provide sites owners a limited immunity from regulatory actions in particular circumstances. Inspired by the voluntary cleanup programs elaborated by different US states (see section 3 of the present document), Bill 56 states that a site owner who cleaned up its sites to the background, generic criteria, or specific risk-based standards could get immunity from any*

future government orders. Municipalities, secured creditors, receivers and trustees in bankruptcy and fiduciaries could also become immune under specific circumstances, which, as for the many exceptions and in a typical Anglo-Saxon fashion, are precisely described in the Bill.

Bill 56, described by its promoters as the first specific Brownfields Program in Canada, is still actually under discussion in Parliament.

POLLUTER PAYS PRINCIPLE VERSUS OWNER PAYS PRINCIPLE: THE SITUATION IN QUEBEC

Speaker: ***Mr. Michel Beaulieu***
Contaminated Soil Unit Québec, Ministry of the Environment Canada

This paper describes the forces responsible over the last 20 years for the cleanup of contaminated sites, in the province of Québec and concludes with some general reflections on the Polluter Pays/Owner Pays Principles.

The Polluter Pays Principle

In Québec, the Polluter Pays Principle appears in the Environment Quality Act*.*

The Environment Quality Act

First adopted in 1972, the *Québec Environment Quality Act* includes an article prohibiting the emission of pollutants in to the environment which has been used in the context of soil rehabilitation[1] to justify government actions against the polluters.

In 1990, some dispositions were added to the Act giving the authorities the clear and specific power to order the assessment and cleanup of a contaminated site to "whoever has emitted, deposited, released or discharged contaminants in the environment" (the polluter).[2] To date, the order can only be taken when a serious threat to human health or the environment is demonstrated, a difficult and time-consuming task. In 11 years, such orders have been taken only thrice! Meanwhile, in the wake of legal modifications expected next fall, Québec plans to extend the polluter's definition. The polluter will then not only be limited to the person "actively"

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1 Article 20 states that:

"No one may **emit, deposit, issue or discharge or allow the emission, deposit, issuance or discharge** into the environment of a contaminant in a greater quantity or concentration than that provided for by regulation of the Government.

The same prohibition applies to the emission, deposit, issuance or discharge of any contaminant the presence of which in the environment is prohibited by regulation of the Government or is likely to affect the life, health, safety, welfare or comfort of human beings, or to cause damage to or otherwise impair the quality of the soil, vegetation, wildlife or property".

2 Article 31.42 of the Environmental Quality Law states that:

"Where the Minister believes on reasonable grounds that a contaminant prohibited by regulation of the Government is present in the environment or that a contaminant present in the environment is likely to affect the life, health, safety, welfare or comfort of human beings, or to cause damage to or to otherwise impair the quality of the soil, vegetation, wildlife or property, he may issue an order to the same effect (assess the contamination) to whoever has emitted, deposited, released or discharged, even before 22 June 1990, all or some of the contaminant.

Article 31.43 gives the Minister the power to order the cleanup of the site to the same people in the same circumstances".

polluting the environment, but will also include someone “passively” doing it, by not acting to prevent the pollution or its extension[3] . The government will also regulate use-based soil quality criteria, allowing future orders to be taken if the level of pollution found in the soil is above the criteria. This will facilitate the authorities’ task in demonstrating that actions (orders) are justified. But even following these modifications, orders should still be a last resort solution, seldom used.

The upcoming legislation will also introduce the obligation for an industry to assess the soil and the groundwater and produce, if necessary, a rehabilitation plan leading to a cleanup in no more than six months following the plant’s closure or mothballing. This is clearly an application of the Polluter Pays Principle.

The Owner Pays Principle

*In Québec, the Owner Pays Principle appears in the Statute Law (*Environment Quality Act *and* Petroleum Product Law*) as well as in the Civil Law.*

The Statute Law

The Environment Quality Act

Even if since 1972, the owner of the contaminants (and not the land) or the person having had their custody or control may get, in emergency cases, a cleanup order[4], the *Québec Environment Quality Act* clearly currently focuses on the polluter as the liable party for contaminated site cleanup.

However, this will change soon. Following a planned modification of the *Environment Quality Act*, the person who “has or had the land custody, as owner, tenant, or any other titles”[5] will join the polluter (by action or omission) as a potentially liable party for sites cleanup if soil’s use-based generic criteria are exceeded on the site or if there is an impact or a serious risk to human health or the environment.

Under the new provisions, past and present polluters and owners will be potentially liable parties, with no concern about the legal status at the time the site was polluted. Note that it is not the owner who will be specifically targeted but the person having the land custody including, but not restricted to the owner.

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3 The new definition will be stated in those terms:

The targeted person (polluter) could be anyone who, even before the adoption of the new provision:

“emitted, deposited, issued or discharged or allowed the emission, deposit, issuance or discharge into the environment, in part or in totality, of the contaminants”.

4 Article 114.1 targets the owner but only in case of emergency.

“Where he considers that there is urgency, the Minister may order **any person or municipality being the owner of certain contaminants or having had the custody or control thereof**, to collect or to remove any contaminant dumped, emitted, issued or discharged into the water or onto the soil, accidentally or contrary to the provisions of this Act or the regulations of the Government, and to take the measures required to clean the water and the soil so that these contaminants cease to be spread or to propagate in the environment”.

5 Order will not be taken against someone having the land custody if he is able to demonstrate that:

- he did not know nor had any reason to suspect that there were contaminants on the land;
- he acted with all care and haste necessary to prevent that the contaminants found in the land did not, notably through migration, impact the environment including human beings

This liability extension is partially motivated by the possibility for the site's owner to use risk assessment in order to manage the contamination in place. Prior to 1998, the Québec *Contaminated Soil Rehabilitation Policy* stated that to be reused, a contaminated site had to be cleaned up to the generic criteria corresponding to the envisioned new use. Since 1998, the *Soil Protection and Contaminated Sites Rehabilitation Policy* gives the site's owner the possibility, following a strictly delineated process (risk assessment, public information, inscription of use restrictions on land title) to reuse a contaminated site without cleaning it up, if he demonstrates that there are no unacceptable risks or that measures are put in place to eliminate or reduce the risks. Of course, to make such a system functional and secure for the future users and for the environment, it is essential to set up a system allowing liability transfer from the polluter to the new owner or from the actual owner to a new owner. It is also essential to have some ways of acting legally against a new owner if he changes the land use without doing a new risk evaluation or neglects to keep the planned protection measures. Without doing this, the new owner would have no responsibility and the polluter would always be on the hook, disregarding any measures he may have taken, reducing its will to engage in such a process and restraining the development-driven cleanup process.

In brief, the opening up to risk assessment and in place management of the contamination is only possible if the Polluter Pays Principle is watered down and if there is some possible liability transfer to a third party (the new owner).

The Petroleum Product Act

The *Petroleum Product Act* adopted in 1991, compelled over the last 10 years, the operators and owners of petroleum product underground storage tanks to upgrade and replace their installations and to clean up the impacted soil when doing the replacement. The government-fixed cleanup goal was to reach the industrial generic criteria. The persons shutting down their installations were also compelled to clean up the sites, this time to the generic criteria corresponding to the new land use. This piece of legislation generated a tremendous number of cleanups. But this example was not followed for other fields of industrial activities. The cleanup of petroleum product contaminated sites is mainly over now. Note that most often in this case, the owners were also the polluters.

The Civil Law

Besides, the Statute Law (establishing legal relationships between the society (government) and the citizens), Québec has a Civil Law, which rules the legal private relationships among citizens. Article 1465 of the Civil Law forces anyone having possessions custody to repair any wrong resulting from those possessions, except if he is able to demonstrate that he committed no fault. This article has occasionally been used by an impacted private party to sue polluted property owners and have them restore damaged neighbouring properties as well as, sometimes, the land being the source of the problem. This is clearly a direct application of the Owner Pays Principle. But very few sites were cleaned up that way.

The Developer Pays Principle

If the impact of the *Petroleum Product Act* is put aside, one as to admit that the most important inducing factor for the cleanup of contaminated sites in Québec over the last 20 years was the will to reuse them (The Developer Pays Principle). Following that principle a contaminated site will be left at peace, as long as the pollution is contained, until the day a developer (it could be the

polluter, the owner or a third party) decides to reuse it. The reuse fosters the cleanup, paid either by the developer, the polluter or the owner, or shared among them. The developer may be a private party, a company, a city, or even the government itself. He is motivated by profit or, in the cases of establishing parks for example, public interest. Unlike the Polluter Pays and the Owner Pays Principles, the Developer Pays Principle expresses itself freely, without the need for the authorities to take any enforcement measures. In fact, it is the real estate market, the lenders and buyers, who impose direct pressure.

Bankers were among the first to understand the necessity to be cautious and to protect themselves against unknown contamination. Before lending money for any projects on a potentially contaminated site, not only its reuse but also the consolidation of its actual use, they now ask the owner or would-be owner (and often developer) to realise a site assessment and, if needed, clean up the site or have it cleaned up by the former owner. Potential buyers, including municipalities, also became extremely cautious over the years.

The resulting cleanup is often considered an emanation of the Polluter Pays or Owner Pays Principles, because it is often the owner or the polluter who are, totally or partly, paying. But in fact, the polluter or the owner is often also the developer, and the real force at play here is the drive for development (Developer Pays Principle).

In 1998, the Québec government put into place a program called REVI-SOLS rooted into the Developer Pays Principle. Following this program, 90 million CDN$ became available over a seven-year period for anyone (including polluters) wishing to redevelop a contaminated piece of property located in an urban area. Following that program a developer gets 50% of the cost involved in assessing and cleaning the contaminated sites if the cleanup does not involve treatment. The grant will rise to 70% of the total cost if there is soil or groundwater treatment. To obtain the grant, the owner/developer has to prove that he has a development project or at least, for municipalities, that the cleanup of the particular site would initiate a redevelopment. The request must be signed by the owner of the property, which in this case, is almost always the owner and sometimes the polluter.

The program has been a success. To date, in the city of Montréal alone, 59 cleanups (1 178 011,00 m^2) were realised at the cost of 35 million CDN$, of which 17,8 million $ was paid by the government. The investments on the cleaned sites amount to 826 232 995,00 CDN$ and yearly perceived municipal taxes of 12 304 014,00 CDN$.

This is the only program related to contaminated sites actually existing in Québec.

General Comments

Considering what happened in Québec over the last 20 years, I will conclude with the following general comments on the Polluter Pays Owner Pays Principle.

Polluter Pays versus Owner Pays: Is it the right question?

Often when discussing historical contaminated sites cleanup liability, we tend to focus on two single “roles”, polluter or owner, one being played against the other. This polarisation masks the fact that in the day-to-day reality, many other “roles” than the polluter and owner ones are at play. The seller, the buyer, the lender, the developer. Moreover, the same person often plays many roles at the same time (polluter and owner; owner and developer; and so on). A polluter may “sit” on a site for years and then clean it up because he simply decides to reuse or sell it. Can we then talk about the Polluter Pays Principle at play?

As regulators, we probably tend to focus on the polluter and the owner because the laws giving us the power to order assessments and cleanups are mostly written following those terms. But in most countries orders are only given if serious threats to human health or the environment occur. For one site cleanup resulting from an order, hundreds are cleaned up “freely”. Clearly, other forces are at play and the development drive appears to be the strongest one. We should acknowledge that fact and add to the much-discussed Owner Pays and Polluter Pays Principles, the Developer Pays Principle.

The Polluter Pays Principle: Is it really enforced somewhere?

A thorough enforcement of the Polluter Pays Principle would mean that polluters should be forced to clean up the sites they polluted, even historical sites, on a relatively short time and without triggering concerns for the level of risks associated to the pollution. Some countries now enforce such rules for new contamination. If they were extended to historical contamination, thousands of sites would be cleaned up, leaving behind only the sites where no polluters could be found or where the polluters were unable to pay. All pollution should be cleaned up, giving back the site the soil and groundwater quality it had prior to the pollution. Such policy, as logical as it may appear, seems nowhere to be found. The main reason is, of course, the tremendous costs its application would mean. In reality, at best, authorities apply a diluted form of the Polluter Pays Principle, where the government is often tolerating pollution as long as there are no unacceptable risks to human health or the environment and waiting for another force, the development, to induce the cleanup.

THE SITUATION OF CONTAMINATED LANDS IN ROMANIA (YEAR 2000)

Speaker: ***Mrs. Mihaela Lazarescu***
National Research and Development Institute for Environmental Protection - ICIM Bucharest
Romania

Solid Waste Generation

In 1999, 77 mil. t. of which 69 mil. t. were industrial solid wastes.

From the Mining Industry, the Quantity is a Variable Function of its Production.

- Counties with high waste production:

Alba;	Prahova;
Vilcea;	Mehedinti;
Hunedoara;	Bacau;
Salaj;	Galati.

Solid waste categories:

- Mining 36 mil. t.
- Ash and slag from thermal plant 6.4 mil. t.
- Metallurgical 2.6 mil. t.
- Mud 2.5 mil. t.
- Chemical 2.2 mil. t.
- Ferrous 1.9 mil. t.
- Construction 3 mil. t.

Economic activities producing waste:

- extraction industry 48 mil. t.
- smelting 3.6 mil. t.
- oil processing 2.2 mil. t.
- chemical industry 2.1 mil. t.
- iron processing industry 1.4 mil. t.
- live-stock, industry 1.2 mil. t.
- food industry 0.9 mil. t.

Hazardous waste types:

- Phospho-gypsum
- Caustic soda
- Petroleum waste
- Non-ferrous industry (lead)
- Halogenated waste from organic chemistry
- Mud containing heavy metals and cyanides
- Old car batteries containing lead

Counties with a high production from the chemical industry:

Alba; Vilcea;

Dolj; Bacau.

Counties of Olt and Maramures produced waste from aluminium processing and non-ferrous ore processing.

Counties of Prahova, Constanta and Bacau produce waste from oil processing.

Landfills

Solid waste management:

- Landfill 81%
- Turning 15%
- Temporary landfill 3.3%
- Burning 0.7%

Total number of landfills is 951 with a total surface 11,986 ha.

Some landfills have environmental protection structures e.g.: waterproofing, stability dikes, drains, groundwater level monitoring devices and water sprinklers against the wind, etc.

Recycled Solid Waste

- Ferrous 91%
- Plastics 87%
- Used oils 86%
- Wood 75%
- Non-ferrous 72%
- Textiles 72%
- Paper 81%
- Live-stock 49%

Projects

In 1999, 30% of the expenses for environmental protection in industry and local authorities were spent for environmental protection against industrial and urban waste.

Type of expense amounts:

Environmental protection, 485,000 USD

Pollution control, 360,000 USD

Waste, 125,000 USD

Investment (from total), 25,000 USD

In the counties of Brasov, Olt, Satu Mare and Suceva investments were made for new ash and slag landfill from thermal power plant and ash turning at Viromet Company. New mud landfill for mud from drinking water plant, ecological landfill for oil waste, temporary landfill for industrial waste, urban waste management, ecological boilers for wood waste combustion.

POLLUTER PAYS PRINCIPLE IN BULGARIA

Speaker: ***Mrs. Ivanka Todorova***
Ministry of Environment and Waters
Bulgaria

According to the Environmental Protection Law - Art.3 (1) and Art. 5, anyone accomplishing harmful damages shall be obliged to:

- eliminate the source of the damage;
- bear responsibility for the damage caused;
- implement activities, which will restore the damage caused.

Implementation of the Principle in Practice

- **In the cases of past (old) contamination:** At the time of restitution and privatization of the property, the new owners shall not be liable for ecological damage caused by past actions or lack of actions. Any property to be privatized must also be evaluated for ongoing pollution and compliance with environmental requirements. The government must launch the expenses.
- **In the cases of an unknown polluter:** The government is responsible.
- **In the cases of a known polluter who is ready to restore damages caused by him:** The state authority (Ministry of Environment) remit part of set penalty or grant financial support such as a loan with low interest by the National Environmental fund.
- **In the cases of a known polluter who is not willing to restore damages caused by him:** The legal way is for the Ministry of Environment to constitute a judicial case.

CAUSES AND CONSEQUENCES OF SOIL DAMAGES IN BOSNIA AND HERZEGOVINA - SOME EXPERIENCES IN SOIL PROTECTION

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Introduction

Soil is among the most important natural resources. Its primary function is in the production of food and raw materials. It is also used for other purposes outside of the spheres of agriculture and forestry. These tendencies will persist in the future. Because of developing society, it will be necessary to grow more food, provide land for new settlements, industries, roads, exploitation of various raw materials, etc. Now is the question: How are two adverse tendencies to co-exist in harmony? It is necessary immediately to emphasize that absolute measures for soil protection don't exist, but it is possible to apply measures and care to reduce losses of good soils. The difficulty is to harmonize the relationships among the great number of pretenders to the soil's resources.

Bosnia and Herzegovina is under the intensive influence of these processes. They are in some domain especially expressed. The problems of harmonization and reduction of damages were in the beginning and at present the problems of soil aggression. The reasons for such situation are numerous. It is possible to mention the lack of responsible politics for soils, where it is very weak, and the war, which was in this region. The war has brought many consequences on soil and into soil. The use of land has extensive character with the strong features of no rationale and elementary treatment.

In this paper, the following will be discussed:

- specificity of relief, climate and soils in Bosnia and Herzegovina,
- causes and consequences of soil damages,
- measures for decreasing the consequences and improving soil protection.

1. Specifics of Relief, Climate and Soils in Bosnia and Herzegovina

Bosnia and Herzegovina is characterized with expressed hilly-mountain relief, which occupies 83,5%, while mountains 57,2%. Hence, the largest part of soils is on slopes above 13%. From the total area of B-H, which amounts to 5,112.900 ha (51.129 km^2), the agricultural area covers 49,4%, forestry 45,6%, and the area without vegetation and soil occupies cca 5%. Hydromorphic soils which are under the influence of surplus water, cover 568.860 ha or 11,13% of the total area.

Pro 1 habitant comes 0,59 ha of agricultural land and 0,36 ha of arable land. As war consequences and war activities the number of population changed from 4,300.000 (1991) to 3,300.000 (the large reduction is attributable to victims and refugees).

In relation to the climate, areas differ in the amount of rainfall. The average amount of rainfall is 1.200 mm. In relation to the single zones, the amounts vary from 800 mm (the northern zone) to 2.000 mm (the southern zone). By its position, Bosnia and Herzegovina belongs partially to the

Mediterranean countries. The soils with acidic reactions occupy 49% of the area. Soils are distributed mainly as follows: dystric cambisol, luvisols, pseudogley, and calcocambisols. The carstic fields occupy cca 150.000 ha.

2. The Causes and the Consequences of Soil Damages

Bosnia and Herzegovina is subject to numerous causes which bring in various ways soil damages. We have separated all forms of soil damages into four basic groups:

- soil infection;
- soil contamination;
- soil degradation in the narrower sense;
- soil destruction.

Soil **infection**: This form of soil damage is as a special form of soil contamination. It is a consequence of keeping a large number of dogs and cats in the households, and their movement in the garden and children's playgrounds. In such manner are especially under the influence the children. In this form can add and the other kinds of diseases (brucelose).

Soil **contamination**: Soil contamination is caused by importing on soil and in soil various pollutants, in various aggregate conditions.

Soil **degradation**: Soil degradation in the narrower sense represents the soil damages caused by the use of soils in the agriculture (soil compaction, unstable structure, erosion, etc.).

Soil **destruction**: Soil destruction represents the physical soil damage, which is the heaviest way of soil loss, and it has the character of a pedocide. By this way, alone, Bosnia and Herzegovina has lost cca 3.000 ha yearly. In the frames of this process we cite the main causes of such kind of soil losses in Table 1.

Table 1. Participation of single causes on soil destruction

Cause	Soil losses	
	Ha	%
- Surface mining	900	30
- Disposals	300	10
- Settlements	600	20
- Water accumulations	300	10
- Roads	300	10
- Industry	300	10
- Erosion, sliding, etc.	300	10
TOTAL	**3.000**	**100.0**

Only with this way, has accumulated an amount of devastated soils for 10 years above 50.000 ha.

3. Actual Consequences on Soil Damages in Bosnia and Herzegovina

As special actual consequences of soil damages are the next:

- surface mining of various raw materials,
- intensive building of settlements,
- development of water erosion and land sliding,
- the presence of mines.

3.1. Surface mining of various raw materials

In Bosnia and Herzegovina is a large presence of coal, iron ore, and bauxite. They are extracted mostly by surface mining. During these works very deep and wide craters are formed. These areas today have the appearance of the moon. About 20.000 ha of such surfaces have been created.

3.2. Intensive building of settlements

This kind of soil damage is a result of war activities forcing the movement of inhabitants away from some areas and their concentration in others. The main concern is with the evacuation of village inhabitants. To allow their relocations in new areas, it was necessary to build new settlements. The building of new houses has mostly occurred on the best soils (I agro-zone). The problem is heavier because such good soils in the area of Bosnia and Herzegovina are rare (cca 14%). It is under such pressure on the soil fund that large areas of the best soils are lost. Such behaviour is responsible and wrong policy, especially when is concerned the giving the locations.

3.3. The development of water erosion and land sliding

The problem of water erosion at present and from earlier periods is favoured by the great inclination of areas and slopes cultivated for growing row crops. Cutting of the forest cover, which has the character of so-called “total cutting”, allows special intensity of water erosion. Namely in the period of war activities, the forests were cut very intensively for the need of the army. After the war, the cutting was continued much more intensively especially for the next reasons:

- the need for the wood and wood materials,
- for the new settlements,
- for the export of wood materials.

As a consequence of such lack of plan and deforestation, especially on the strong inclined surfaces, the development of very strong gully from water erosion. The result of such behaviour is the development of landslide. In these processes are included very large areas.

3.4. Land mining

With the period of war came the mining on large areas of land. It is estimated that cca 420,000 ha of territory of Bosnia and Herzegovina are covered with mines. It is calculated that there are more than 1 million mines in the 30,000 minefields. With such pressure from mines, these areas, besides the large danger they represent for inhabitants, have large economic consequences, because they cannot be used for agriculture. The process of de-mining is very expensive and it lasts for long periods of time. It is estimated that the process of de-mining will last cca 20 to 30 years.

4. The Measures of Soil Protection and Amelioration

Here are included two main groups of measures: present and preventive measures.

4.1. Present measures

Special interest is given to the next forms of soil damages:

- surface mining,
- disposal of overburden materials,
- disposal of industrial and municipal wastes.

4.1.1. Amelioration of soil damages formed by surface mining

The total fund of these damages amounts to cca 20,000 ha. These damages are in the areas of some communities and are excluded from the use, for a large part, as cultivated land.

The re-cultivation measures comprise cca 1.500 ha. of land. On these re-cultivated areas are present today: orchards, crop cultures, grassland and forests. The age of some re-cultivated areas amounts to more than 30 years. The overburden materials are mostly marl (loamy and clayey). These surfaces are concentrated in the region where the surface mining of coal (lignite) was carried out. On one part, the changes in the soil properties, i.e. the physical and chemical properties and some processes are investigated. On these areas was carried out the so-called full re-cultivation that uses the technical, agro-technical and biological measures.

4.1.2. Re-cultivation of fly ash disposals

The disposals of fly ash and slag occupy an area of cca 250 ha. On one part of this area is carried out the re-cultivation (cca 5 ha). On these surfaces was brought the soil layer from 20 cm, and on which are grown some crops (maize, cereals).

4.1.3. Re-cultivation of municipal wastes

In the vicinity of Sarajevo, on one part of disposal of municipal waste is brought the soil layer from 20 cm. On these surfaces is grassland.

4.2. The preventive measures

For the purpose of protection against soil damages, it is useful to consider some preventive measures.

They include the following:

- laws and regulations,
- maps of soil qualities,
- estimation of actual and potential soil water erosion,
- evaluation of soil pollution,
- changes in the way the soil is used.

4.2.1. The laws and regulations

The soil protection is ensured by several laws: the law for the protection of agricultural soils, the law for surface mining, the law for the protection of natural resources, the law for protection of the environment. The large distribution through many laws has some negative consequences. They bring about the possibilities for their misuse. It is manifested spatially by unintentional use of the soil. Now it is discussed the elaboration of one special law, where will be included the complex problems about the soil and the various maps of soils for different purposes.

4.2.2. The maps of soil qualities (bonity)

The maps of soil quality - bonity, on one part of Bosnia and Herzegovina are finished. The soils were separated into four agro-zones:

- I zone - with bonity from I to III, as the most valuable soils,
- II zone - with the bonity IV, as the zone with soils of medium fertility,
- III zone - with the bonity of V and VI, as soils with low fertility,
- IV zone - with the bonity of VII and VIII, as soils with very unfavourable properties.

4.2.3. The evaluation of soil water erosion

Now it is prepared and the elaboration of map of actual and potential soil water erosion, in the scale 1:50.000.

4.2.4. Control of soil fertility

For the purpose of following the changes in soil fertility is organized the investigation of soils in definite periods (every 4 years). All surfaces, which are used for the intensive agriculture, are covered by these measures.

4.2.5. The evaluation of soil pollution

In this field is investigated the areas in the vicinity of industrial areas from the aspect of the content of heavy metals. As well, in these works are included soil surfaces near roads.

4.2.6. The change of way of use of soils on slopes

Bosnia and Herzegovina is characterized with the hilly-mountain relief, where more than 80% of territory is on slopes above 13%. Some of these lands are used for intensive agricultural crops. As a result of such kind of soil use comes the development of soil water erosion. The last year are worked out the project of such kind of soil use. The purpose is for changes to occur gradually. In the first phase are included the slopes larger than 20 %. The tendency is that row crops (potato, maize) be excluded from such surfaces. These surfaces can be used for grassland, orchards and forests.

5. The proposals for the future collaboration

As numerous problems are present in my country and in other countries in this region, it is possible to collaborate on projects for their solving. As especially urgent problems can separate the next:

_ the possibilities of harmonization of relationships between ecological and technical soil functions,
_ the evaluation of condition of actual and potential soil water erosion,
_ the collaboration on the problems connected with changing the way soil is used on slopes,
_ the collaboration on the problems connected with soil contamination and the remediation measures of polluted soils,
_ the collaboration in the domain of ways of soil re-cultivation,
_ the experiences in the SIS (Soil Information System),
_ the collaboration on the giving the priority of de-mining processes,
_ the collaboration in the domain of evaluation of soil infection,
_ the collaboration of elaborating of a uniform for soil protection,
_ determination of soil radionuclides especially depleted uranium,
_ measures for the destruction of old drugs.

Conclusions

In this paper are discussed the main problems of soil damages in Bosnia and Herzegovina. These damages are categorized in four kinds of damages: infection, contamination, degradation and destruction. The annual losses, only with the process of soil destruction are cca 3.000 ha.

Intensive processes which are actual today in B-H are the following: surface exploitation of various raw materials, the building of settlements on arable land, the development of water erosion and landslides and the presence of mines.

In the purpose of actions for soil protection in the countries of this region it is proposed several measures, such as: the collaboration in the domain of soil re-cultivation and remediation, the changes in the kind of soil use on slopes. It is also important to elaborate one special law, i.e. Law for Soil Protection.

Literature

Blum, W.E.H. (1990): The challenge of soil protection in Europe. Environmental Convention, 17.

Blum, W.E.H. (1999): Sustainable land use and environmental protection. Soil and water use relating to sustainable development and environmental protection. Acad.Sci. and arts of Bosnia and Herzegovina, Vol. CIX, Sarajevo.

Basic, F., Kisic, I., Burotac, A., Mesic, M. (1997): Soil erosion by different tillage system on stagnology in Croatia. Proc. of 14th Conference of ISSRC. Pulawy, Poland.

Bugonovic, M., Vidacek, Z., Racz, Z., Husnjak, S., Sraka, M. (1998): Soil suitability Map for cultivation purposes of the R. Croatia. Proc.of 16th World Congress of Soil Science. Montpellier, France.

Resulovic H. (1999): Soil resources in Bosnia and Herzegovina their use in the function of sustainable development. Soil and water use relating to sustainable development in the function of sustainable development. Acad.of Science and Arts of Bosnia and Herzegovina, Sarajevo, Vol.CIX.

PART B. QUESTIONS AND ANSWERS

List of questions

1. What are your comments in general to the thoughts presented in our paper?
2. Is the Polluter Pays Principle an accepted principle in your country; if so, is it a policy principle or a legal principle?
3. Are other parties than polluters also made to pay?
4. If so, which parties and what are the arguments?
5. If more parties are liable does the legislation/regulation provide priority rules between the parties, or can the appropriate government level make a choice in each individual case?
6. What are the arguments for other parties to be taken into account?
7. Do you know in your country of an obligation for the owner/leaseholder to clean up or prevent further spreading?
8. Does a grant or compensation scheme for owners or other parties that clean up exist?
9. If so, what are the principles of the scheme?

Answers Regarding the Situation in Japan by Prof. Tadashi Otsuk (totsuka@mn.waseda.ac.jp)

1. We are planning to make a law for cleaning up non-agricultural land in the committee within the Ministry of Environment. The Polluter Pays Principle and Owner Pays Principle are the hot issue in the committee. We also are bothered with the issue.
2. It is a legal principle, but there is also the beneficiary pays principle in Basic Environmental Law. And there is also the Owner Pays Principle as a policy principle in some administrative laws.
3. In the Law for cleaning up agricultural land, 1970, the State or local government can clean up contaminated lands by themselves and they raise all or the part of the cost from polluters. So only polluters are made to pay other than the government. But now we are planning to make a law for non-agricultural land. Some plan to make a system where owners and polluters are made to pay. That is why owners are responsible for the risk that their property causes.
4. See no 3.
5. It is now discussed for non-agricultural lands. Some plan to make a system that polluters should clean up the contaminated lands by themselves when they are identified by the government.
6. It is now discussed for non-agricultural lands.
7. It is planned that owners should prevent further spreading, because the owners are responsible for the risk that their property causes. In addition, some municipalities have ordinances where developers, who very often have a certain right for the land, should take an obligation not to spread the contaminated soil.
8. No. Not yet.

Answers Regarding Romania

Romanian Environmental Protection Law

December 1995

2. Principle “Polluters Pays” - legal principle.
3. No. The polluter is usually the owner of the factory.
4. No.
5. The Ministry of Waters and Environmental Protection in important pollution cases can decide how will be shared the fees for cleaning up.
6. All parties involved, when is the case, must pay.
7. In environmental impact assessment studies, some measures for cleaning up and pollution prevention are recommended. The Environmental Protection Inspectorates for each county and Bucharest (42) can oblige to clean up the contaminated sites, even if it is difficult to implement the obligation because of expensive technologies.
8. No.

PART C. REFERENCE PAPERS

FINANCING THE REMEDIATION OF CONTAMINATED LAND

Presented by Malcolm Lowe, Department of the Environment, Contaminated Land and Liabilities at EU Common Forum on Contaminated Land, Stockholm, September 1996

The Financing of Remediation

My task today is to talk about the financing of remediation. I hope to identify some of the major issues, which are involved, and to outline a model for considering how these issues are relevant and affect each other.

Trying to find ways of financing remediation is rather like the experiments of scientists in the middle ages. They were trying to turn lead into gold. Now we are trying to find the gold to turn the lead and the hydrocarbons, and the asbestos into anything else. The alchemists failed. I think that we can succeed, even if it is never going to be easy.

So how can we set about answering this apparently impossible question? The normal trick when faced with a very large question is to break it down into lots of smaller questions. So that is what I will attempt to do today.

The Six Honest Men

In England, we have a children's' nursery rhyme about the "six honest men" each of whom asks a different question. The questions these honest men ask are why, what, when, where, who and how.

This rhyme helps to teach little children about the types of questions you can ask. I think it will help us as well, as we try to break down our own problem of financing remediation.

But in this subject, maybe the honesty of the "six honest men" is not quite enough. Firstly because there is another question I want to ask. But also because I have always been told that a good presentation will always have an odd number of points. I must therefore add in another question-and we must find a seventh "dishonest man" to ask the question "whom?"

Why?

So the first of honest men asks the question "why?" Why are we financing remediation? This may seem to be a bit obvious a question to ask at the Member States' Common Forum on Contaminated Land, but it does need to be asked.

I would suggest that there are two basic reasons why we might want to finance remediation. The first is to counter risks to health and the environment, which might be caused if we did not. The second is to enable land damaged in the past to be brought back into worthwhile use for the future.

There is, perhaps, a third reason for paying for remediation work to take place. That is merely because the contaminated land happens to be there, and the remediation would be possible. Under some economic theories, public works of this kind are by themselves a good thing, even if they do not directly achieve anything worthwhile. It has even been suggested that the economy will benefit as a result of the jobs created through the so-called multiplier effect, if the Government pays people to dig holes, and then pays other people to fill them in again. Come to think of it, that sounds awfully like quite a lot of remediation projects.

Not every economist goes along with this theory, however. Certainly, very few employed by our Government in the UK do. So it is probably as well to check with the economist you are trying to convince, before you attempt to use this argument to support a case for carrying out remediation.

But even where the case for carrying out remediation is rather more solid, there will always be a need to make the case. And this justification will vary from project to project and from programme to programme.

What?

This leads on to the question asked by the second of my "honest men": "what?" "What are we paying for?" What are we trying to achieve by devoting resources to the remediation of land?

Once again, I would suggest the answers to this question fall into two groups: restoration; or making land "suitable for use".

But in reality, even these two "answers" serve mainly to prompt more questions.

What are we restoring the land to? Is it to the condition it was in before industry came along? Or before a particular pollution incident? To background levels? There are a large number of possibilities.

Considering the "use" of the land, are we talking about the current use? Or is it a new use, which we want to introduce as part of a redevelopment, for example? Or are we tidying up the land for a range of possible future uses?

And then there is the big question, of whether we would give the same answer in all cases. For example, do we go for restoration in some circumstances, but making the land suitable for a current use in others? Or do we always try to make land suitable for a range of uses?

Whatever the answers we come up with, the outcome has to be fair. It also has to be sustainable, both in terms of implications for the environment, and in terms of economics. And we also have to look at what we can actually achieve. What can the technology we have available actually do?

When?

Perhaps we can examine these ranges of options better if we now ask the question of our third "honest man": when? When are we seeking to finance remediation?

Once again, there are two different broad sets of options. We can be driven by events, or we can be working to a deliberate programme.

Under the heading of events, any of the following might trigger an awareness that remediation is needed: particular pollution incidents; particular effects, such as contaminants showing up in water, being predicted or actually happening; risks from an individual site being assessed; the closure of particular industrial sites; the sale of the land; the development of the land.

Programmes looking back to our "why" question could be built up around the identification of risks to health and the environment, or around economic regeneration objectives such as preparing sites for possible inward investment.

The complicating factor here is that within any country, different remediation projects will take place as response to different timing issues. It could be that all of the possible triggers I have mentioned might be relevant at some time or another. I think it is true to say that in the UK each one of these factors can be relevant in different circumstances.

Where?

The fourth question and the one, which finishes off, the consideration of the remediation itself is "where?" Where is the remediation being carried out?

The simple answer of "on the contaminated sites" is not really enough! Different issues may be raised for financing according to whether those sites are in urban or in rural areas; whether they are in industrial or in housing areas; and most importantly, whether they are in areas of social and economic deprivation or industrial decline.

This last point may affect whether Governments or local authorities are willing to put public money into remediation. The European Commission also has a role here. It may make funds available from its Structural Funds such as the European Regional Development Fund -ERDF- in some areas, but in others it may stop national programmes on the grounds of "competition policy" and "state aids".

Considering the four questions asked by the "honest men" so far, we should have a way of looking at what it is we want to fund. This will then help us to work out the second half of the puzzle, which is how to pay for it.

Who?

So our fifth "honest man" asks the question "who?" Who is going to pay for the remediation?

This is at the heart of our overall problem of identifying funding approaches to remediation, because whatever the funding mechanism, someone actually has to provide the money.

Now here there are - as far as I can see - only four possible groups of people or organisations that could finance remediation. They are polluters, developers of the land, owners or occupiers of the land or the general public. But having said there are only four groups, of course each of them can be broken down further.

The category of "polluters" is perhaps the most difficult. Who exactly counts as a "polluter" when one industry has caused the entry of contaminants into the land, another has deliberately allowed the contaminants to stay there? What about the company, which moved the contaminants about in the course of building the housing, which is now at risk? Following a strict dictionary definition, it would be the first of these. But in another view, it is the last - the developer - who is most at fault, and has done the most to create the "problem".

And do we think of individual companies, and their activities on particular contaminated sites, or do we look at wider industry sectors? Are we looking at the past activities at all, or are we imposing costs on current potentially polluting activities, through environmental taxes, for example?

Making the owners of the land pay is another possible approach. You can make an argument that this is reasonable, as the owner of the land is the person who benefits most from the remediation. But isn't the current owner of the land the "innocent victim" of pollution in the past? What happens to prices in a property market if land stops being an asset, and ownership starts to bring liabilities for environmental problems? This might not be a problem in some countries, but in the UK - where - every Englishman's home is his castle", and we have a very active property industry - this is a big issue.

How?

Even considering the issue of making polluters pay for remediation may be impossibly difficult in some circumstances. And this leads on to the question asked by our sixth and final "honest man": how? How are the people who might pay for remediation actually going to do so?

In terms of payment mechanisms, the approaches, which have been attempted, include:

- **"Voluntary"methods.** It might seem strange to talk of "voluntary" payments for remediation, but I think this is appropriate. I am thinking in particular of the circumstances in which a developer cleans up a site so that he can carry out a profitable development project on the site.
- **Enforcement action.** Here we are in the territory of liability regimes. Particular companies or individuals might be required to carry out remediation work, on pain of criminal prosecution. Or they might have to repay to a public authority the costs incurred by that authority as it carries out the remediation.
- **Funds and special taxes.** Industrial sectors may choose - or be forced - to get together and sort out the problems created by that sector. Alternatively, "environmental taxes" may be imposed to pay for particular programmes of works.
- **Insurance and bonds.** This may be a growth area for the future, with insurers – particularly where developments have taken place on contaminated sites - meet the costs of further remediation if it is found to be necessary. But the insurance funds have to be provided by insurance premiums. One suggested way round the problem is getting insurers to carry any financial risks, is to require companies to create their own insurance funds, by providing bonds which could be drawn down if remediation is needed.
- **Public funds.** These could come into the picture in a number of ways. Policy decisions may be made which say that it is unreasonable to expect anyone in particular to pay for what happened in the past. It may not be possible to work out who should be responsible, or they may no longer be in a position to pay. Or public funding may be needed to make up the commercial deficit that would otherwise be left in a development project which is needed for wider economic or social regeneration reasons.

When looking in detail at any of these broad methods, there are a number of follow up questions. Can we get it to work for the projects or programmes we need to fund? Can we make it work in our country, or are there particular legal or cultural problems which would prevent it? Will we be able to get enough money to pay for the remediation, which is needed?

And there is a wider "how" issue which applies to all of these, which is that even if the payment system can be made to work in the short term, is it sustainable economically. Or to put it another way, "how are the people who are going to pay, going to afford to pay?"

Whom?

There is also the last of my original seven questions - the one I gave to the "dishonest man". To whom are these people going to pay anything?

In some cases, this will be simple. A developer will pay real money to a contractor to carry out the remediation work on site.

In other case, the real burden will not fall on the person directly paying for the work to be carried out.

The burden may have fallen on others through tax payments - either general taxes or special environmental ones - or through insurance premiums.

A more complicated case may occur where land has been sold. A “polluter” may have sold on his land, expecting responsibility for any contamination to have passed with the ownership of the land. He may have given a substantial discount on the price he asked for the land. In these circumstances, you could say that the “polluter had paid”. If, as a matter of public policy, we now go after the “polluter” for the costs of remediation, we could end up with a situation where the “polluter pays twice”.

A further set of difficult issues is raised by questions of civil liability, and compensation for damage. This is an area, which keeps lawyers in each of our countries - and a large number of staff in DGXI - very busy. I certainly will not be able to solve the issues raised in this presentation - if anyone can solve them at all. But they need to be considered along with other funding issues, as they could affect the success in practice of other funding mechanisms.

So What?

Over the past few minutes, I have mapped out a framework for looking at the issue of financing remediation. What I have not attempted to do is to give a definitive answer to the practical problem of how to finance real work on real sites. Indeed, something like a third of the actual sentences in my talk so far have taken the form of further questions. But I do not think there are any definite “answers” which can be applied generally.

I also haven’t looked in detail at how particular funding mechanisms could be used, or have been used. Very useful work has been done by others - in particular Vilma Visser for the Ad Hoc Working Group - analysing the mechanisms in use in different countries, and some of the problems met. Over dinner tonight, we could expand on this, telling each other of the problems we have faced in our own countries.

What I have done, I hope, is to provide the outline of a tool for analysing the issue. Let me indulge myself by giving an example.

Example: Remediation to enable economic redevelopment of an individual site

The “why” question appears to be easy - it is to enable the reuse of the land, for social or economic reasons.

The “what” would seem to follow on. We need to make the land suitable to its intended new use.

But what happens if under the “when” heading, we have made a policy choice that we are going to use site redevelopment as a trigger for requiring remediation on a wider basis? We might see a need to do this, because we cannot enforce a “polluter pays” regime for past polluting activities.

This could add another “what” issue - that of aiming for some broader basis of restoration of the site.

If the under the “where” heading, we discover that our site is not in an assisted area, we could start getting into deep trouble when we start considering “who” is going to pay.

Normally, for a commercial re-development, you might expect the developer to pay for the actual remediation. He may have funded this by getting the land cheap - so a polluter may have paid, ultimately. But adding wider restoration objectives to the remediation project adds to the development costs, without bringing the developer any commercial benefit, which he can sell on.

This may well mean that we have an uneconomic development project. Our restoration objectives have killed it, unless we can add in another source of funding. Public funds are going to be difficult, because of the implications for “state aids” under the European Single Market. Is there any way we can go back to get more money out of the polluter?

This could mean that by trying to do too much, we have actually prevented “voluntary” finance from carrying out remediation. That investment money will be lost for our purposes, and we might have to find other money to pay for the remediation.

Conclusions

Apart from any direct conclusions about particular funding mechanisms or the way that other issues might impact on them, my conclusions come under three headings.

Firstly, there are no easy solutions, but you did not need me to tell you that.

Secondly, financing has to be considered along with all of the other issues surrounding the remediation of contaminated land. Each issue has implications for all of the others. But this is not just a matter of chaos theory, with unpredictable effects. We have a joke in our department in the UK that if you place a tax on tin mining in Cornwall, the price of bread in Newcastle goes up. If this actually happened it would be, at first sight, a complete mystery, but looking at the details, would reveal the mechanisms involved.

And this leads to my third, and perhaps most optimistic conclusion. By looking systematically at each of the issues - perhaps asking for your own circumstances each of the questions I have raised today - it will be possible to find mechanisms for funding remediation which work. It may not be easy, but it should be possible.

FINANCING FOR REMEDIATION OF CONTAMINATED SITES

An outline for discussion

Malcolm Lowe

UK Department of the Environment, 1997

Introduction

1. The question of financing has to be considered as an integral part of any programme for the remediation of contaminated sites. This applies at two levels: firstly, because without funding, the programme will never achieve its environmental objectives; and secondly, because the way in which the wider objectives and features of the programme are developed will affect both the political and administrative acceptability of the programme and its success in attracting funding for remediation on individual sites.
2. There is not, and cannot be, a single solution to the problem of financing remediation. The viability of any funding mechanism will be dependent on a wide range of factors that are likely to vary considerably between sites within any country and, more particularly, between different countries. This paper sets out a framework within which the nature of different potential funding mechanisms can be analysed, and outlines some of the factors, which may affect those different kinds of mechanism. A systematic analysis of these factors may assist policy-makers in drawing useful lessons from the experience in countries other than their own.

Approaches to Financing

3. It is possible, in abstract, to identify four general approaches to the financing of remediation:
   - Liability regimes*. These impose legally enforceable requirements on companies or individuals to carry out, or at least to pay for, the remediation of sites for which they are deemed to be responsible. This responsibility can be based on the actions of those companies or individuals (under the "Polluter Pays" approach, for example) or may attach to the ownership or occupation of the sites concerned. Potential liabilities can be crystallised, and remediation ordered, in a range of circumstances, for example on the sale of the site, at the closure of an industrial plant or facility or as a result of a programme of site inspection by regulatory authorities.*
   - Company or industry sector voluntary programmes*. These can provide funding for site remediation either directly from within the program-holding company, running its own programme of site remediation, or through a collective fund within a wider industry sector. Funds of this kind may be associated with explicit programmes of site remediation, or may be available to deal with "orphan" sites, which would otherwise be handled under a liability regime.*
   - Public subsidy/taxation*. This involves central or local government funding the remediation from taxation revenues. In some cases the funding will come from general revenues (e.g. from income or sales taxes), in other cases it may come from specific taxation of particular activities or product use. "Compulsory" levies on industry sectors would be regarded by economists as falling into this category.*
   - Social economic regeneration programmes/commercial redevelopment*. This category relates to sites which are remediated during the course of their redevelopment for commercial, economic or social reasons - and not, primarily, for environmental reasons.*

4. The purpose of producing an analytical split of this kind is to permit the examination of the factors, which might affect the success of any funding programme. A wide range of external factors will have significant impacts on these questions, and it is suggested that they will impact differently on funding schemes falling within each of the four different categories. (This paper outlines below some of the factors, which may be relevant for these purposes.)

5 . *The categories identified are, however, not likely ever to be more than "ideal types" for the purposes of analysis. There are three important* caveats*, which must be borne in mind.*

- Individual funding schemes within the same broad category will, nonetheless, vary greatly. This is likely to mean that they will respond in different ways to the same external influences.
- It may, in practice, be difficult to attribute any particular funding scheme to a single category, either because it combines aspects of two categories or because the worked-up scheme as a whole reacts in different ways to different circumstances. An example of the first of these would be public subsidy for site remediation, where the primary objective was economic or social. Legislation establishing a liability regime could exhibit the second of these problems, as it will have to deal with circumstances in which the government is itself "liable", and those where it is not possible to identify any liable party; in either case, the costs will have to be met from tax revenues.
- It is unlikely that a single funding scheme will actually fund the remediation needed on all of the contaminated sites in any country. The circumstances of those different sites will vary too much to make this possible. This means that a "portfolio" of different funding methods may need to be in place; indeed, this is likely to occur without any conscious intervention by government. For example, while the main focus of national authorities may be on action to deal with threats to groundwater in a particular region and there may be an established programme to remediate sites for this purpose, there may be at the same time a significant commercial programme of "Brownfield" regeneration which will continue - and will also remediate sites.

6. A further important point to make here is that not all sources of funding, and indeed not all "remediation programmes", will be the result of conscious activity or promotion by governments or other policy makers. Private investors, for example, provide very substantial amounts of funding for site remediation in the context of the commercial redevelopment of Brownfield sites. This is not happening at the instigation of, or necessarily with the approval of, environmental authorities, but this environmentally beneficial activity does need to be considered alongside other forms of funding.

Developing a Funding Framework

7. The policy maker looking at a funding scheme will inevitably have to address three questions:
   - Is it possible to get the scheme adopted? It is acceptable to those who have to make the necessary political, commercial or administrative decisions?
   - Will the scheme actually yield enough money?
   - Will the scheme enable other objectives and priorities - in particular, environmental priorities - to be met?

8. The answers to each of these questions lie in how the proposed scheme fits into a wider context of public policy, the technical circumstances of the sites in question and a wide range of political and socio-economic factors. Also important will be the impacts of other funding schemes and approaches already in place or proposed for adoption. For example, if public subsidies are fairly freely available in some circumstances, a very rigorous liability regime is likely to look out of place and may prove to be politically unacceptable and could also undermine efforts to encourage corporate enterprises to establish "voluntary" remediation programmes which they fund themselves.

9. This implies that the process of developing funding schemes - particularly when the objective is to ensure that a complete portfolio of approaches is in place to meet the needs of the diverse range of sites in any area - is likely to be highly iterative. This applies both within any remediation programme - how do the particular objectives of the programme match the details of the funding approach - and between different programmes.

Facts Affecting Funding Schemes

10. Even a casual comparison of the experience in different countries reveals clearly that what appears to work by way of funding in one country does not necessarily work in other countries. The factors affecting the success of any scheme seem to be highly country, regional and even site specific. This is not a surprising conclusion.

11. We are not yet in a position to produce a predictive model, linking particular factors with particular funding strategies, but it is possible to suggest what types of factors might be involved. The following are suggested at this stage:

- ***Site Characteristics. (N.B. these might apply both in the consideration of individual sites, and also in whether there is a "typical" site profile prevalent in a country).***
  - geographical factors, including site locations and the structure and strength of local economies;
  - historical factors: at the level of individual sites, these might include whether "polluters" can still be identified, whether the sites have been abandoned, and when the pollution occurred; on a wider level, these might include significantly the impact of significant historical events, such as wars;
  - particular environmental problems, such as whether sites are affecting groundwater, agricultural soils or the health of human occupants; also whether the condition of sites is presenting current risks or is inhibiting the reuse and redevelopment of the sites themselves.
- ***Socio-Political Factors***
  - political will behind the enforcement of environmental action;
  - public perceptions/pressure, both with respect to the perceived importance of risks and also attitudes to corporate "polluters";
  - corporate "attitudes", for sample the contrast between "stakeholder" and pure free market approaches to social responsibility;
  - political attitude towards taxation;
  - political attitude to wards regulation.

- ***Economic Factors***
  - overall level of prosperity;
  - nature and pattern of past and present changes in the structure of the economy (e.g. whether key polluting industries have been centred in particular locations, and have gone into decline at a similar time);
  - balance between state and private sectors in the economy;
  - nature and strength of the property market/commercial redevelopment of land.
- ***Legal Factors***
  - impact of legal codes/constitutions.
- ***Other Policy Instruments***
  - existence of complementary policy initiatives, e.g. systems of land use planning and development control, economic regeneration programmes.

12. This listing is intended only to be illustrative at this stage. There is a need to look in much closer detail to see how these factors and others actually do influence the success or failure of possible funding approaches and schemes, drawing in practical experience from the different countries where the various approaches have been adopted or explored.

Priorities for Further Work

13. It is suggested that further, more detailed, work on the factors influencing funding for remediation is important to enable policy-markers to have a greater understanding in this area and to be able to use the experience of other countries in an informed way when shaping policies in their own countries. This has both a positive aspect - in consciously “designing” funding schemes - but also a defensive aspect in providing ammunition to enable policy makers to resist uninformed “cherry-picking” from the systems in other countries.

14. The next stage of work is to build on the discussions in Amsterdam, and to seek to draw concrete lessons from the various national experiences in terms of how the factors outlined above have influenced the success of funding approaches.

15. A useful “target” for an output from this work could be a Paper for presentation at ConSoil, 98 in Edinburgh.