

Greening Financial Markets

Report of the
UNEP Round-Table Meeting
on Commercial Banks
and the Environment



26-27th September 1994
Geneva

Edited by Scott Vaughan



Environment
and Trade

United Nations
Environment Programme

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Production Assistants: Kenneth Maguire
Katherine Bidwell



PREFACE

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As environmental policies become increasingly inseparable from core economic policies and activities as diverse as transport, energy, agriculture, fisheries, forestry, and biotechnology, it is imperative that mainstream economic actors become fully engaged in the green agenda. Considerable progress is already being made in integrating environmental considerations in fiscal, trade, and other areas. One area in which innovative solutions are emerging is in the financial services sector. Commercial banks, investment banks, pension and mutual funds, the insurance sector, and others are looking to manage environmental issues as part of their core business activities. A recent UNEP-Salomon Brother global survey of the financial services sector, released in January 1995, found that some 70 percent of the world's leading commercial and investment banks perform some degree of environmental financial risk assessment of borrowers before moving ahead with credit decisions.

Since 1991, UNEP has been working with the commercial banking sector to identify practical ways of integrating environmental management tools – such as environmental risk assessment, environmental auditing, and the identification of environmental technologies – into operational activities. The challenge remains enormous. In 1992, for example, the *Statement by Banks on the Environment and Sustainable Development*, drafted by the UNEP Advisory Group on Banks and the Environment, was signed by some 30 leading commercial banks and submitted to the Earth Summit. Since then, UNEP has, on an on-going basis, provided a number of banks with information about

technical areas of environmental management. At present, 70 banks have signed the “Statement”.

The purpose of the September 1994 Round-Table Meeting was to facilitate an exchange of perspectives and experiences on environmental management. This report provides an overview of the main areas discussed over two days, as well as presents background papers to the meeting. I am grateful to National Westminster Bank and Royal Bank of Canada for their generous support in co-publishing this report.

Elizabeth Dowdeswell
Executive Director
UN Environment Programme

ROYAL BANK OF CANADA

Royal Bank of Canada believes that human welfare depends upon both sound economic growth and maintenance of a healthy environment, and recognizes that the two are inextricably linked. The Bank is, therefore, committed to managing its operations in such a way as to promote these twin aims. Our goal is to shape our policies and business actions in ways which promote environmental protection so as to meet the needs of the present without compromising those of the future. Environmental risks and regulations are, as a result, given appropriate consideration in the assessment of proposed loans and investments, as well as in the manner in which we manage our internal operations, (having due regard for associated benefits and costs).

We value the importance of our association and working relationship with UNEP very highly, and we look forward to developing future initiatives that will have mutual benefits similar to those of the September 1994 Round-Table Meeting on Financial Services and the Environment.

Allan R. Taylor
Chairman and Chief Executive Officer

NATWEST GROUP

The NatWest Group is committed to achieving environmental best practice throughout its business activities, wherever this is practicable. We recognise that the pursuit of economic growth and a healthy environment must be closely linked and that ecological protection and sustainable development are collective responsibilities in which governments, businesses, individuals and communities all have a role to play. Our environmental responsibility programme is based upon continuous improvement, consistent with current knowledge. Environmental management continues to be a corporate priority, fully integrated into our business. We believe sound environmental practice is a key factor demonstrating effective corporate management. We will seek to educate and train our staff to act in an environmentally responsible manner.

The NatWest Group's external environmental issues programme is designed to complement our own environmental management system and to ensure that NatWest has access to relevant information that supports our business activities, both in the UK and overseas. Through its work with organisations such as UNEP, NatWest is able to encourage other banks from around the world to integrate environmental issues into their core business activities."

Derek Wanless,
Chief Executive

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INTRODUCTION AND SUMMARY

INTRODUCTION

Public Concern and Business Initiatives

As the search for new solutions to environmental degradation intensifies, it is clear that the process by which regulatory solutions are designed and enforced by public agencies upon the private sector is becoming increasingly obsolete. There are numerous reasons for this important shift in the way in which environmental decisions and environmental policies take shape. Two of the most compelling are as follows:

First, public awareness of the scope, severity, and unprecedented nature of environmental problems continues to grow rapidly. Public preference for environmental quality is relatively immune from economic recessions. Instead of advocating compromises and half measures, the public is deeply concerned about a growing list of environmental issues as diverse as ozone layer depletion, climate change and global warming, the alarming loss of biological diversity, the proliferation of hazardous wastes and toxic chemicals, as well as more familiar but equally problematic issues, such as acid rain, freshwater scarcity and pollution, deforestation, marine pollution, and deforestation, to name but a few.

Second, solutions to the sustainable development challenge demand new, flexible, and innovative solutions. One example of new approaches to environmental management is the increasing use in recent years of market-based instruments such as pollution charges, or user fees and taxes on environmental goods and services. The concept of using economic instruments to solve environmental problems is compelling: unless the pricing and market failures associated with environmental degradation are not tackled, environmental policy will continue to work on the insufficient level of addressing the symptoms of

environmental problems, without addressing the economic causes.

Together, public concern for environmental problems and the need to address underlying economic causes of those problems are creating new and powerful changes in the environmental agenda. Public authorities, faced with tightening public budgets, are looking to the private sector to come forward with new, flexible, cost-effective, and innovative solutions to environmental management.

The Greening of Markets

Perhaps nowhere is this intersection of public concern and private initiative more promising than in the private financial services sector. Among the larger and leading banks, considerable work is underway in building environmental management practices into internal operations. Such practices include energy efficiency, waste reduction and minimization, and the selection of suppliers with comparably high environmental standards. In addition to operational activities, the longer-term promise of the so-called “greening” of banks is also directly related to the elusive goal of internalizing environmental externalities. As banks move to integrate environmental factors into core credit and investment decisions, there is clear evidence that market signals are slowly shifting in favour of environmentally sound companies, clients, investments, and technologies.

That goal – the greening of market signals towards sustainable development – was articulated at the 1992 Earth Summit. Considerable work lies ahead in such areas as the identification and quantification of environmental risks, the targeting of higher growth environmental goods and services, the linking of environmental “products” with financial products, and the gradual integration of environmental factors into capital markets and financial rating systems. However, the financial services sector is already looking at environmental issues as core operational, lending, and investment business concerns.

UNEP ROUND-TABLE MEETING OF COMMERCIAL BANKS ON THE ENVIRONMENT – A SUMMARY

Although an enormous amount of work is being done by individual banks and national bankers' associations to build up environmental capacity, there is little opportunity at the international level to exchange experience and perspectives among bankers on these issues. Given the growing importance of international measures related to environmental management – initiatives as diverse as the Convention on Climate Change, the amendments to the Montreal Protocol to protect the ozone layer, or the establishment of the Trade and Environment Committee under the newly established World Trade Organization – there was a need to facilitate an exchange of views about environmental management among private sector practitioners.

In addition, given the enormous amount of activity underway among the multilateral, regional, and bilateral development banks in environmental management, it was clear that the private and public sectors need to work more closely together.

The UNEP Round-Table on Commercial Banks and the Environment was held in Geneva, Switzerland, on 26-27 September 1994. It was attended by some 80 participants, including representatives from over 45 commercial banks, as well as representatives from the insurance sector, multilateral and regional development banks, non-governmental organizations, and others.

The main presentations are attached in this report, together with various background reports and related materials. The following presents a selected summary of some of the main discussions.

1. ENVIRONMENTAL MANAGEMENT AND THE FINANCIAL SERVICES SECTOR

The EBRD Survey of Commercial Banks was presented, highlighting the importance of environmental risk management in the credit process. The key finding of the Survey shows that most US and European Banks experienced significant commercial losses as a result of environmental risk. US banks have most

consistently applied environmental risk management procedures. European Banks have applied them less consistently, despite the high degree of coherence in the types of procedures adopted, such as screening and customer information disclosure.

The role of environmental management in the financial services sector in Central and Eastern Europe was analyzed, and the following main features of the financial market emerged:

- uncertainty of the regulatory environment;
- low priority of the environmental issues, relative to other major pending economic problems;
- although environmental risk is perceived as a cause of commercial loss, its management is still uncommon.

The BCSD Task Force expressed its aim of mobilizing financial markets to promote eco-efficiency in order to smooth the trade-off between ecological and economic growth objectives, expanding profitability within the context of environmental protection. Financial markets would distribute the environmental management risk based on constraints posed by regulators and decision makers, which should take into account the financial markets dynamics to promote environmental policies. Crucial elements include discounting, related both to efficiency and to inter-generational equity issues; the risk portfolio, involving the individual company and the market risk; and the phenomenon of consolidation, which implies dissemination of information among creditors, market investors, and the public.

2. ENVIRONMENTAL RISKS AND COMMERCIAL BANKS

2.1 Indirect Environmental Risk

Presentations were made by the UNEP Industry Office, General Accident, EBRD, and Greenpeace International.

The UNEP Industry Office underlined the need to explore the implications of stricter regulations for clean-up and remediation, pollution abatement, environmental liability for both industrial procedures and products, the issue of lender liability, and financial risk. Since banks' analyses of environmental risk concern mainly the issues of site and land contamination, industrial accidents, and

the more general environmental problems of a borrower. To perform environmental screening and risks evaluation, the following factors are considered:

- sectoral analysis of environmental issues;
- analysis of the project specific issues, such as the environmental procedures adopted, the environmental management tools used, and the product's life-cycle assessment;
- environmental records of the company, in terms of emissions, compliance with regulations, and environmental reporting.

Emphasis was placed on the use of management tools such as Environmental Impact Assessment and Environmental Auditing at the micro and macro levels of analysis, providing empirical evidence to support environmental risk management.

The Industry Office underscored the need to develop a pro-active approach to a better risk assessment and to a more eco-efficient world. This will entail a more transparent definition of "cleaner production" and its financing process.

Climate change

General Accident noted that insurance schemes vary according to the typology of risk involved. These schemes are therefore extremely sensitive to environmental uncertainty and to its influence on market factors. Insurance affordability is therefore an important issue.

Emphasis was placed on the role that the insurance industry could play in the market-place by limiting and transferring environmental risk and by controlling environmental damage associated, in particular, with climate change. To boost the insurance market, the following steps should be taken: research on weather patterns and the economic implications of climate change should be improved; key hazards should be identified; and cooperation among the various agents involved, such as financial intermediaries, the private and the public sectors, together with a process of "education" of the property stake-holders, should be enhanced.

The discussion focused on the sectoral sensitivity to insurance procedures and on the need for *ad hoc* interventions in highly fragile or already exploited areas.

Greenpeace International emphasized the need to solve the inconsistencies in the climate debate, given the scientific assessments made and the stabilization objectives of the Climate Convention. Environmental risk should be addressed at source from the industry, given the status of the present knowledge about impacts of climate change and the various legal and technical constraints.

Greenpeace noted the importance of international liability in cases of transboundary pollution with particular reference to nuclear projects. The need to adhere to international conventions not only in the countries where project are implemented, but even in neighbouring countries, was strongly emphasized, particularly in the presence of higher risk related to technological and environmental uncertainty.

The EBRD presented its primary activities and their implications for environmental policies. The Bank focuses on the creation, rehabilitation, and modernization of infrastructures, on the creation and strengthening of financial institutions, on assisting the privatization and restructuring process, on providing technical assistance, and on developing the local private sector. The key criteria for financing are based on market terms, but the Bank is trying to pursue environmental policies in the form of promotion of environmental protection and restoration, environmental review of all investments and technical cooperation projects, environmental policy formulation, and public participation and education in the environmental field. The EBRD is primarily concerned with the role it can play in dealing with past and present contamination, with the compliance of enterprises to the existing regulations, and with the modification or improvement of the existing regulatory framework, particularly with reference to liability issues and additionality.

Additionally, analysis of project-specific effects on global issues raises the fundamental issue of the need to link micro and the macro elements of environmental

analysis, respectively at the project and programme/policy levels, emphasizing the role that the banks, as financial intermediaries, could play.

The EBRD explained the nature of its exposure to environmental risk, underlining its interaction with other financial intermediaries such as regional and local banks and insurance and leasing companies. It expressed the need for harmonization among institutions to control the sources of environmental risk.

2.2 Direct Risks to Financial Services

Presentations were made by the American Bankers' Association, the World Bank, and the European Bankers' Association.

The American Bankers' Association analyzed the U.S. Superfund mechanism and experience, showing that the use of liabilities to create incentives for clean up activities may be unsuccessful. It expressed the need to negotiate more appropriate market instruments and incentives for clean up activities and environmental protection at the industry level.

Despite this criticism, the Superfund mechanism was further analyzed during the discussion, and the following positive implications were highlighted; first, its importance on environmental compliance, since it works as a strong incentive for industries and most of the private sector to adopt clean green measures, and since it enhances a common public understanding of the issue; second, despite the fact that only a few sites responded to standards compliance under the Superfund scheme, it generally helped to limit environmental damage.

The World Bank emphasized its increasing involvement in co-financing with the private sector to leverage funds towards environmentally related project finance.

The main areas of World Bank interventions include liabilities, property rights, public participation, environmental impact assessment, and laws and regulations enforcement.

The European Bankers' Association noted how, in the liability area, European countries follow both a common law and a civil law approach. It pointed out

that environmental risk management needs to emphasize the role of public participation and awareness. This can include market incentives, such as eco-labelling schemes, enhancing harmonization within the financial sector among multilateral and private financial institutions, and other areas.

3. Developing an Environmental Policy

The National Westminster Bank, the Union Bank of Switzerland, the British Bankers' Association, and the Federation Bancaire de la Communaute Europeenne briefly presented their environmental policies.

It was noted that the environmental policies of individual banks should be part of a broader environmental programme, an "agreed green agenda" which enhances environmental protection.

Several priorities were noted in developing an internal environmental policy. It was crucial that environmental policies address day-to-day operations, business opportunities, lending policies and practices, procurement, training and provision of information, and community operation programmes. These activities can benefit from stronger cooperation between private financial institutions and environmental organizations and from enhancement of public participation and awareness.

The need to provide incentives for effective environmental risk control and environmental policy implementation in small scale businesses, (which represent a huge market share of financial institutions' customers) was emphasized. The liabilities issue was also raised: it was pointed out that lenders' liabilities should be guaranteed by the adoption of the agreed green agenda, rather than through banking insurance schemes.

4. Environmental Credit Risk Management

The Deutsche Bank, Royal Bank of Scotland, International Finance Corporation, and Union Bank of Switzerland intervened.

It was noted how, since 1992, environmental analysis has been incorporated into banking activities, both at

the domestic and at the international levels. The main elements of the domestic corporate banking environmental policy consist of training activities, information campaigns, directives for credit risk procedure, and assessment of the environmental risk potential and at its management aspect.

Methodologies vary according to sectors of activity and to credit scope, as well as whether activities are national or international. International credit loans are usually conditional on EIAs. At the national level, environmental policies appear to have been more successful. UBS emphasized the need to provide guidelines and to work on education and training.

The discussion underlined the need to focus on training and education as a means to incorporate environmental management into day-to-day operations. At present, environmental policy is largely a priority of top management, and challenges remain in operational integration.

However, due to the business scope of commercial banks, consisting of medium-small scale companies, the profitability of clean environmental policies required more analysis. To date, internal environmental risk management is defined as a defensive concept, rather than a profitable policy.

The International Finance Corporation, primarily involved in project financing and capital markets, analyzed the nature of environmental risk, distinguishing between risks to the natural environment, involving major hazards and site contamination, and risks to financial institutions. Financial institutions are involved in terms of credit risk, position risk, such as devaluation of the company's securities, security risk, because of defunct or devalued land based collateral, legal risk, related to exercise of control and monitoring, and funding risk, linked to funds accessibility.

The complexity and gravity of environmental risk to financial institutions requires appropriate risk management based on reviewing procedures, preparation of legal documentation, monitoring, and reporting. This could lead to higher efficiency, competitiveness, and marketing of financial products.

5. Environmental Management Tools

Presentations were given by the Royal Bank of Canada and the Credit Suisse.

It was agreed that environmental management tools should be improved and standardized. Environmental management tools, in the form of environmental auditing, environmental reports, and eco-balances, could provide the appropriate background for financial institutions' analysis of environmental risk. But these tools have not yet been established: environmental auditing is sectoral; environmental reports do not allow cross-comparison; and eco-balance sheets are often based on national standards, which necessitate harmonization procedures.

It was noted that banks should focus on the following main activities: the evaluation of the borrower's exposure, its official classification, the conformity with environmental legislation and due diligence procedures, lender liability, insurance cover, investment in environmental measures, adoption of eco-criteria in investment, and evaluation of the technical status of plants.

It was noted that environmental management tools should be placed in the broader framework of sustainability. Environmental management is a tool for financial professionals to deal with environmental risk. However, the concept of environmental risk is extremely complex, involving both natural and financial risk. The belief that capital markets could adapt to environmental risk was challenged, as was the extent to which technology could adjust to handle environmental risk.

The discussion raised the following issues:

- the need to define environmental standards for banks' general compliance, as well as a methodologies which assess macro and micro issues;
- the need to disseminate information and to induce the market to produce useful information, to lower transaction costs in order to promote higher efficiency in environmental management, particularly when small and medium scale business is involved.

6. Due Diligence Procedures

The EBRD, GHK, and Morrison & Foerster gave presentations.

The discussion underlined the difficulties in applying due diligence procedures. These difficulties are mainly due to the interdependence of due diligence procedures with environmental risk management, particularly in the areas of risk transfer and monitoring techniques.

Key issues include the effectiveness of the use of procedures and the scope of practicing procedures.

Future issues to be addressed include: the most effective combination of screening criteria; identification of appropriate standards to be adopted; analysis of the extent risk monitoring has been used by banks in due-diligence process.

Discussion also focused on the issue of financing clean technology transfer:

- empirical evidence showing the profitability of financing clean technology needs to be provided;
- assuming that clean technology financing represents an opportunity for banks, its implications for due diligence procedures needs to be elaborated;
- bank behaviour and activities aimed at clean market production need to be identified by the market, i.e. proper signals need to be sent to customers.

Prevention could be based on risk quantification measures, on the development of proper tools where risk quantification is not feasible, and on addressing opportunity issues.

The following considerations were raised during the discussion.

- the experience gained in the USA and Western and Eastern Europe should provide lessons for developing countries, where lack of expertise and human resources seems to be a major constraint to environmental management in the financial sector;

- the banks should make sure that the projects they finance meet the minimum law requirements, and they should make their environmental checklists readable to everybody, (eg: by cooperating with regulatory agencies to enhance transparency);
- in case of co-financing, the best option needs to be defined, taking into account alternatives and the ability to meet different standards;
- developing countries representatives noted the lack of environmental policies in their financial sectors.

7. Internal Operations and Environmental Performance

The National Westminster Bank and the Royal Bank of Scotland gave presentations.

Presentations were made on success stories in internal auditing systems, based on several areas of analysis. Empirical evidence showed the economic benefits stemming from improved energy efficiency. Emphasis needs to be placed equally on internal and external education and on the need to induce management – led environmental policies.

The importance of enhancing communication with the shareholders, the customers, the staff, and the community was underlined.

The discussion focused on the following points:

- banks need more empirical evidence to evaluate projects and alternatives; the profitability of “environmental friendly” projects must be proved;
- case studies could provide some empirical evidence useful to banks’ evaluation of environmental performance;
- uncertainty in scientific data and about the validity of information impairs banks’ ability to assess changes in their lending portfolio;
- the lending portfolio should be framed within the global perspective of sustainable development;
- procurement practices provide the opportunity to influence the market.

8. Public Finance and Private-Public Sector Partnerships

Presentations were given by the IFC, GEF, EIB, and the Delphi Group.

The Global Environmental Fund, operational since 1991, has focused on climate change, biodiversity, ozone layer depletion, and international water management. The Multilateral Fund under the Montreal Protocol, operational since 1991, focuses on phasing out of CFCs and other ozone-depleting substances.

The GEF is based on grants and concessional finance, international technical assistance and research, and incremental cost financing. The criteria for selection of projects include the need to be cost-effective, sustainable, innovative, accrue to global benefits, and reflect incremental costs. The portfolio and regional breakdown of the projects was provided.

EIB project evaluation process follows three stages, starting from the definition of baseline standards, then moving into an analysis of the context specific to the project, and finally to an analysis of the project itself. Projects are categorized according to the degree of environmental risk involved.

Potential innovations were identified with convertible grants, sub-licensing, guarantees on investments, venture capital and service, leasing companies.

9. Increasing Private-Public Sector Cooperation and Opportunities for Public-Private Sector Finance in the Environment

The need for incentives to promote cooperation between the public and the private sector was generally agreed upon. Creating incentives capable of directing and targeting funds was considered particularly important since this cannot be achieved by punitive measures.

Eco-labelling of green investments (currently practised in the Netherlands), was proposed as one form of incentive.

The Business Council for Sustainable Development illustrated its attempt to promote public-private cooperation at the municipal level and to deal with urban environmental problems.

Greenpeace International emphasized that the lack of enforcement and the more rapid process of negotiations on climate conventions would undermine the security of the insurance markets and financial sectors. Despite good intentions, insufficient market signals have been sent to favor the adoption of climate-friendly technologies. Potential solutions include the creation of a lobby-group to represent financial sector's interests in the climate change debate, the promotion of information flows, through strategic advertising in the market place, and the strategic targeting of investments and lending.

The World Bank emphasized the need for coherence between projects financed under the GEF and multilateral agreements. It also pointed out the GEF's potential as a leveraging force for raising private sector funds in the developing world and shaping the future scope of joint project implementation. Given shrinking public funds, financial intermediaries should assume a monitoring role.

The Metropolitan Environmental Monitoring Programme, under the World Bank, was presented as a sample of financing line credits to small scale business aimed at generating anti-pollution activities.

The Deutsche Bank outlined problems involved in public-private partnership facing national and cross-border financing, versus balance sheet and project financing assessment. The issues of country risk present cross-border financing, and the creation of infrastructures in most projects' financing in Eastern Europe, emerged as key elements to be tackled by the partnership.

The following suggestions were raised:

- the need to create an agreement between multilateral and private financial institutions towards a common environmental policy;
- the need for harmonization of environmental standards;
- the need to quantify the net benefits stemming from environmental protection for the private banking sector;
- the need to relate environmental protection to the broader picture of sustainability.

**UNEP Round-Table Meeting on Financial Services and the Environment
26-27 September, 1994
International Conference Centre of Geneva;
Salle IV**

MONDAY, 26 SEPTEMBER 1994

- 9.00 Registration: International Conference Centre of Geneva
Meeting Room – Salle IV
- 9.30 **Opening Session**
Elizabeth Dowdeswell, Executive Director, UN Environment Programme (Meeting Chair)
- 10.00 **Session One: Environment and Financial Services:**
John Ganzi, “Initial Findings, UNEP-Salomon Global Survey”
J. Brooks, GHK International, EBRD Survey
K. Muller, BCSD Capital Markets Task Force
- 11.00 **Session Two: Environmental Risk: Part One: Indirect Risks:**
Jacqueline Aloisi de Lardere, UNEP Industry Office
Andrew Dlugolecki, General Accident
Mark King, EBRD
Jeremy Leggett/Simon Carrol, Greenpeace International
- Discussion
- 12.30 **Lunch Break**
- 14.00 **Part Two: Direct Risks to Financial Services:**
Thomas Greco, American Bankers’ Association
Charles Di Leva, World Bank

- 15.00 **Session Three: Developing an Environmental Policy:**
Hilary Thompson, National Westminster Bank
Franz Knecht, Swiss Banking Corporation
Peter Blackman, British Bankers Association
Philippe Van Blerk, Federation Bancaire de la Communauté Européenne
- 16.00 **Session Four: Environmental Credit Risk Management**
Sven Hansen, Union Bank of Switzerland
Victor Bruns, Deutsche Bank
E.S. Funnell, Royal Bank of Scotland
Letitia Oliveria, International Finance Corporation
- Discussion
- 17.30 **Panel Discussion: “Past Lessons, Emerging Markets: Cleaning-Up the Mess, not Messing Up the Clean-Up”**
Katalin Forgacs, Budapest Bank
Baghdo Akay, Bank of America
Charles Crowe, HSBC Holdings plc Representative, Econatsbank
- 18.30 **RECEPTION HOSTED BY ELIZABETH DOWDESWELL**

TUESDAY, 27 SEPTEMBER

- 9.30 **Session One: Environmental Management Tools**
John Gray, Royal Bank of Canada
Otti Bisang, Credit Suisse
Malcom Hutton, EMR
David Smith, UNEP Consultant
- 10.30 **Session Two: Due Diligence Procedures**
Mark King, EBRD
Jonathan Brooks, GHK
Brad Gentry, Morrison & Foerster
D. Jeffrey Telego, Environmental Bankers' Association
- 11.30 **Session Three: Internal Operations and Environmental Performance**
Hilary Thompson, National Westminster
E.S. Funnell, Royal Bank of Scotland
- 12.30 **Lunch Break**
- 14.00 **Session Four: Public Finance and Private-Public Sector Partnerships**
Letitia Oliveria, International Finance Corporation
Michael Ben Eli, UNEP Global Environment Facility
Campbell Thomson, European Investment Bank
Nick Parker, Delphi Group
- Discussion
- 15.30 **Session Five: Opportunities for Public-Private Sector Finance in the Environment**
G. A. Sedee, Netherlands' Bankers' Association
Jeremy Leggett, Greenpeace International
Charles di Leva, World Bank
N. Parker, SPM
- 16:30 **Panel Discussion: "Increasing Private-Public Sector Cooperation"**
Alfred Musial, Bank Handlowy
Victor Bruns, Deutsche Bank
Michael Ben Eli, UNEP (Global Environment Facility)
- 17.30 **Close of Meeting**

Elizabeth Dowdeswell
Executive Director, UNEP

The main objective of this meeting is to facilitate a dialogue and exchange of views among commercial bankers, national associations, multilateral and regional development banks and others. As you know, a tremendous amount of effort is currently underway in assessing environmental links to the financial services sector. It entails work by the insurance and re-insurance sectors in quantifying sectoral and regional risk. It includes increasingly sophisticated credit risk policies, geared to integrate environmental risk in lending practices, and lending rates. It includes the interest among rating agencies, capital markets and others in environmental risk. It includes increased targeting of investment funds towards the multi-billion dollar market in green goods and services.

For over 20 years, UNEP – which serves as the environmental agency of the United Nations – has worked closely with industry in developing environmental management strategies. Since 1991, we have worked with a small group of commercial banks in trying to understand and catalyze industry awareness in the environmental agenda. We are aware in UNEP that commercial banks cannot, and should not be expected to act as environmental policemen, monitoring and enforcing regulatory compliance among your borrowers. That is not the role of lenders. However, we do believe that – as key economic actors – the more you know about environmental risks and opportunities, the better. The more you begin to view the environmental sector as an arena either to make money, through smart lending and investment practices, or to lose money, by assuming that environmental risks don't really matter, the better. And the more closely the financial services sector integrates environmental considerations into everyday economic practices, the closer we move to realizing the economic imperative which underlies sustainable development.

There is now a clear realization that sustainable development will not, and cannot, be achieved, by governments acting alone. We need the expertise of

the private sector. Not as a matter of corporate philanthropy. But rather, because it is in the business self-interests of the private sector to understand and capitalize upon the quickly moving national and international environmental agendas.

I understand that there is a degree of suspicion on both sides. Many in the business community are asking just how far the green agenda intends to push. Many on the environmental side continue to say that business remains an obstacle to progress. Instead of confrontation, we need a way to build partnerships, to find solutions together. That is not a resourceful sounding slogan, but a call to you for greater input, especially at the early stages in the development or clarification of regulations. We need to hear from you on an on-going basis.

Over the next two days, we will hear about environmental credit risk and due diligence policies. Risk management is at the core of your business operations. It is also at the core of how environmental policies are formed at the outset. In many ways, we have a great deal to learn from you about quantifying risk and opportunities.

Let me briefly table four recent examples which underline the huge financial dimensions of the international environmental agenda. Earlier this year, in looking at new timetables and commitments to accelerate the phase-out of CFCs and other ozone layer destroying chemicals, governments agreed to fund a \$510 million fund over three years, to assist industry in developing countries in meeting the disciplines of the Montreal Protocol. Also earlier this year, governments agreed to replenish the Global Environment Facility to an amount of \$2.2 billion over three years, to assist transitional and developing economies in implementing environmental strategies. Two weeks ago, here in Geneva, the GATT held its first meeting for the newly established World Trade Organization, to look at the intersection of trade liberalization and environmental protection policies. And in two months, governments will meet for the first meeting of the Parties for the Convention on Biodiversity. At issue will be issues of core interest to the quickly growing biotechnology, as

well as pharmaceutical, farm seedling, and other sectors.

In short, the environmental agenda has become big business. You will hear of the impressive efforts underway by, for example, the World Bank, the International Finance Corporation, EBRD and others increasing environmental expertise. We are grateful to our colleagues from these institutions for being here today.

Despite these activities, the real contours of environmental opportunity remains squarely with the private sector. A recent article, for example, in the Financial Times estimates that portfolio investment to emerging economies exceeds \$1.3 trillion per year. Foreign direct investment now represents over \$2 trillion per year, of which one-quarter moves to developing economies.

UNEP is neither a financial agency, nor a lending institute. Yet, we are convinced that the greening of the financial services sector is of critical importance in building sustainable development. Although any policy and business change is gradual, it is imperative that environmental considerations be integrated into how business decisions are made, day in, day out. Not as a matter of good public relations, but because it makes solid business sense. As a relative new-comer to the United Nations, I well understand the strengths of inertia, suspicion of change, and potency of familiarity.

Yet, for you in the financial services sector, change, anticipation and adaptation to customer needs and market trends is a matter of competitive survival. The environmental agenda represents an agenda of real change. An agenda of risk, and risk management. And an agenda of tremendous opportunity. Growth forecasts, for instance, in pollution abatement, waste treatment and environmental technologies remains, in many countries, at six or seven percent per annum until the end of the decade. The global market in waste treatment alone may exceed \$500 billion per year, by the end of the decade.

This is just example the tremendous opportunities which are emerging. Jacqueline Aloisi de Larderel – the head of UNEP’s Paris Industry office – will make some remarks this morning both indirect risks, as well as some emerging opportunities, especially in cleaner production. It is imperative that these risks and opportunities become more clearly defined, especially for lenders operating in Eastern and Central Europe, where a backlog of acute ecological problems must be addressed with limited financial resources.

There is also tremendous effort underway in specific aspects of due diligence. UNEP is closely involved in environmental auditing, environmental impact assessment, corporate environmental reporting, and other areas. I would be interested in your views on how to sharpen this work, to help meet your needs. EBRD and IFC are doing extremely valuable work on due diligence and training. Is there a need, for example, for the development of international guidelines for due diligence?

DAY ONE

**SESSION ONE:
ENVIRONMENT AND FINANCIAL SERVICES**

UNEP GLOBAL SURVEY ON ENVIRONMENTAL POLICIES AND PRACTICES OF THE FINANCIAL SERVICES INDUSTRY

ENVIRONMENTAL POLICIES AND PRACTICES OF THE FINANCIAL SERVICES SECTOR

EXECUTIVE SUMMARY

This research, sponsored by the United Nations Environment Programme with additional financial support from Salomon Inc, serves as a barometer of how the industry is currently looking at key environmental issues. It is a critical first step in the establishment of a more proactive and global approach to environmental initiatives within the financial services industry. Due to its international scope and the breadth of issues covered, the survey is intended to provide an empirical contribution to understanding how environmental issues are influencing the financial services industry, and the perceived importance of such issues within the industry.

The research was designed to examine five major areas:

1. Determine the current extent and focus of environmental activities/programs within the commercial and investment banking segments of the financial services industry.
2. Explore the differences in the approaches taken towards environmental liability exposure and risk management between equity and debt financing transactions.
3. Identify industry practices and related trends as they pertain to environmental regulations and guidelines affecting the financial services community.
4. Understand the industry's short-, medium-, and long-term perspective on environmental issues, as well as, the extent of specific environmental programs and activities currently in place and those anticipated to be adopted in the future.

5. Identify where additional technical support would be most useful in responding to the environmental concerns of the targeted segments of the financial services industry and specifically how multilateral agencies could fill that need.

Key findings

A substantial amount of data was gathered concerning the environmental activities, perceptions and future expectations of the international financial services industry. Some of its findings are consistent with previous country-specific studies. In a number of instances, however, the information gathered is more broadly based and thus more descriptive of industry trends than previous surveys. The study identified a number of key trends:

1. Seventy percent of the respondents believe that environmental issues have a material impact on their business. Initially, it appears that firms focus on non-core activities such as energy conservation and recycling. However, as their awareness grows so does their willingness to take on environmental initiatives that relate directly to core banking activities, such as environmental credit risk analysis and transactions with firms that focus on environmental technologies.
2. The focus on environmentally related activities crosses all geographic regions of the world's industrialized economies. North America is most - focused on risk management processes and tools and European institutions are leading the way on identifying environmentally-related new business opportunities.
3. Over 80% of the respondents perform some degree of environmental risk management on the debt side of their business. This percentage is even higher in industrialized countries. However, environmental issues presently appear to play little role when it comes to equity financing. Also, compared to the day-to-day management of risk associated with a specific transaction, environmental criteria are less likely to be included in formulating an overall lending and investment strategy.

4. Liability is the single greatest issue currently facing respondents. The financial risks, present and future, associated with environmental liability arising from the extension of credit have become a major concern for financial institutions around the world.

5. Differences in regulations, both within and across national borders, are posing an increasing problem for the industry. Firms are concerned about their ability to comply with the growing volume and complexity of environmental regulation that affects their industry. This trend is expected to continue over the next fifteen years.

6. While much environmental due diligence is performed prior to committing funds to a transaction, once the funds are committed little monitoring of the environmental risk associated with a company's activities occurs. This appears to be tied to (i) the current interpretation of national legislation on the issue and related liability concerns and (ii) the cost of designing and managing a monitoring process.

7. A need exists for more meaningful analytical data and risk quantification tools.

8. Regardless of their current perspective, geographic base, or economic stage of development, all respondents believed environmental issues will receive more attention and become increasingly integrated with core business activities over the next 15 years. In particular, financial institutions will be more likely to look for transactional opportunities with environmentally-related businesses.

Implications of findings

The results of this study highlight eight areas that need to be addressed by the industry, governments and multilateral agencies as financial institutions become more involved with environmental issues over the next 15 years.

1. Individual institutions will need to continue to expand environmental initiatives, especially as they relate to core banking activities.

2. The industry and multilateral agencies need to extend the environmental practices already in place in industrial economies to developing countries and expand the existing process of establishing environmental practices in transitional economies.

3. Institutions need to explore more seriously the revenue side of the equation rather than focus primarily on risk management.

4. Institutions need to broaden their focus to include effective approaches to address environmental issues associated with equity financing.

5. National governments and multilaterals need to play a key role in creating "global" environmental guidelines' regulations that would simplify the approach to cross-border transactions, while also setting the stage for an "even" playing field.

6. The industry needs more sophisticated, empirically-based risk management tools.

7. More information needs to be gathered on the industry's requirements in the areas of risk management, credit analysis, training and modeling.

8. Given the regional differences in focus and activities, the overall industry would benefit from a global exchange of information on environmentally focused banking policies and practices.

This study establishes a base of knowledge about current environmental policies and practices within the global financial services industry. Understanding the reasons behind the study's findings is an important next step in helping both banks and multilateral agencies within the industry to improve their responsiveness to the risks and opportunities presented by the environmental questions facing the global economy.

UNEP GLOBAL SURVEY ON ENVIRONMENTAL POLICIES AND PRACTICES OF THE FINANCIAL SERVICES INDUSTRY

I. OVERVIEW OF THE STUDY

Prior to the mid-1980's the financial services industry was deemed to have a nominal impact on the environmental quality of the world, on the sound use of natural resources, or on the recently popularized concept of "sustainable development." Over the last several years, however, industry watchers and participants around the world have come to realize that the financial service industry's actions do, in fact, play a major role in shaping the nature of a very broad range of environmental and economic issues.

This research, conducted by the Environment and Finance Research Enterprise, sponsored by the United Nations Environment Programme with additional financial support from Salomon Inc., serves as a barometer of how the industry is currently looking at these key environmental issues. The study succeeded in identifying a number of key trends regarding the industry's commitment to environmental programs over the next fifteen years. Due to its international scope and the breadth of issues covered, the survey contributes materially to understanding the importance of environmental issues within the financial services industry. The research and its findings will assist the United Nations Environment Programme, other multilateral agencies, business associations, national ministries and individual firms in adopting a more proactive and global approach to supporting environmental initiatives within the financial services industry.

What role does the financial services industry play in the area of environmental stewardship or sustainable development and why is it important? The answer is tied directly to the nature of the industry's purpose - providing capital in all its various forms to individuals, companies and governments for economic development.

The extent to which financial institutions (i) perform environmental reviews when making an investment or loan decision or (ii) redefine the liability issue to

consider not only risks, but opportunities as well, will greatly impact the global environment. This is true because these actions are significant in determining what technologies and development activities are supported, and conversely which remain unfunded.

II. RESEARCH APPROACH

1. Criteria for identifying and selecting an institution - The research was designed to include institutions from all major financial markets. Criteria were developed to identify firms to be included in the survey. The target population was to be composed largely of firms with home offices in countries with developed financial markets. The United Nations Environment Programme requested that the research team focus primarily on commercial banks, and secondarily on investment banks, and also that at least 20% of the initial target population be from non-industrial economies.

2. Secondary research on industry - The population was selected based on information obtained from the major banking source books available in English (Moody's, Standard & Poor's, Polk's, Thomson's, etc.), as well as a review of several trade publications and member lists of a number of major associations. The process resulted in identifying close to 500 institutions worldwide.

3. Phone qualification - Each selected institution (288) was called at least twice. Where possible, the environmental affairs management department was contacted.

4. Mailing of Surveys - The survey was mailed to each identified individual that agreed to participate (172).

5. Follow-up contact - If no written response was received within 5 weeks, a follow-up call was made. If the institution no longer wished to participate, a reason for declining was requested.

A copy of the survey is included as Appendix A.

III. RESPONDENTS

A. Targeted institutions

288	Institutions identified as potential respondents
210	Institutions reached by phone
172	Institutions qualified on phone
172	Surveys mailed/faxed
131	Institutions responded (41 formally declined for a wide range of reasons ranging from not applicable to confidentially or liability concerns)
90	Completed surveys received*

B. Responses segmented by geography and development stage of financial markets**

42	Europe
75	Industrial
27	North America
14	Transitional
18	Asia/Pacific
1	Developing
3	Middle East Africa
0	South America

The complete lack of response from South-America was the only major disappointment of the study. A dozen surveys were mailed to pre-qualified institutions who had expressed an interest and or support for the study and its objectives. Follow-up phone calls were either returned with further assurances of completion or not returned. Given the nature of the study no reason for the lack of response can be offered.

The number of responses from firms in transitional economies is extremely encouraging since on a percentage basis they participated at a level equal to firms in industrial economies. Although we received only one response from a firm in a developing economy, it must be noted that institutions from developing economies (i) represented only 3% of the initial sample of 288 institutions and (ii) accounted for only three of the 172 pre-qualified institutions that received the survey.

A list of respondents is presented as Appendix C.

IV. RESULTS/FINDINGS

A. Current Environmental Activities (Section I of the survey)

A wide range of questions and areas were covered under this heading, as it focused on specific areas of current institutional involvement.

1. Environmental issues overall

Seventy-seven percent of the respondents rated the perceived effect of environmental issues on their institution as either "great" or "somewhat."

Slightly less than 50% of the respondents have a documented environment policy. For those that do, the policy has been in effect an average of four years. Somewhat surprisingly, the existence of a formal policy does not have a material impact on the firms future focus on environmental issues.

2. Credit risk management

When asked to rate their frequency in performing specific environmentally-oriented credit risk management activities, 94% of the respondents indicated some involvement in this area. The following table shows the ratings based on a six-point scale (6=regularity, 5=often, 4=sometimes, 3=occasionally, 2=seldom and 1=never). The last column of the table indicates the percentage of respondents performing these activities on a regular basis.

Average Response	Activity	% Responding "6"
4.01	Environmental Impact Assessments	29%
3.98	Environmental Credit Risk Analysis or Audit	35%
2.99	Adding environmental criteria to the credit review process	16%

The data strongly suggests that the majority of respondents are actively considering the relevance of

environmental issues to their risk management activities. Over 50% of the respondents rated at least one of the three activities as being performed on a regular basis. This finding appears to cross all geographic borders within the industrialized economies, but a regular review process is more infrequent in the transitional economies. (See pages 3 and 4 of Appendix B for data based on stage of development.) As to the differences based on geography, North American-based institutions appear to have the greatest focus. Surprisingly, European institutions appear to put the least-effort in this area (see pages 1 and 2 of Appendix B for comparisons based on geographic location).

3. Lending investment strategy

Using the same six-point rating scale as above, the response to questions concerning how environmental issues are affecting an institution's lending and investment strategies are shown in the following table.

Average Response	Activity
3.47	Loan to or invest in firms that focus on environmental technologies
2.85	Targeting of loans/lines of credit for environmental firms
2.01	Joint ventures with Development Banks
1.76	Targeting environmentally related venture capital funds

Compared to credit risk management, respondents are less likely to include environmental criteria in formulating their overall lending or investment strategic focus. The disparity in these responses confirms many opinions that bankers are focusing primarily on the risk-management side solely and not looking for the revenue opportunities to be found in the environmental industry. When firms do look at the revenue side they appear to be putting more emphasis on debt financing than equity financing.

When we look at these questions based on stage of financial market development or geography we

observe some interesting results. It appears that the stage of financial market development has no influence on the response to these questions. However, geography does influence the results. In contrast to the responses regarding credit risk management, European institutions place the most emphasis on lending and investment strategies, followed by Asian institutions. For more specific question-by-question comparisons, see pages 1 - 4 of Appendix B.

4. Educating staff, customers and the general public

Average Response	Activity
4.01	Educating staff about the environment
2.83	Educating customers about the environment
2.21	Educating the public about the environment

5. Recycling, resource and energy conservation, and procurement procedures

Average Response	Activity
4.44	Energy conservation
4.19	Recycling
3.94	Resource reduction and resource reuse
3.31	Adding environmental criteria to all procurement decisions

B. Environmental Liability, Exposure or Risk (Section III of the survey)

This section focused on strategies to manage liability as it relates to environmental issues. The survey responses revealed that liability is the single greatest issue they face.

1. Overall approach to liability management

Firms appear to be focusing heavily on the issue of effective environmental risk management as it relates to debt extension (loans and lines of credit) in the

pre-contractual stage of the credit review process. Less attention is given to this same issue on the equity side. Surprisingly, minimal work is being undertaken on monitoring of, or in many instances, even including, environmental covenants in the loan documentation or other negotiated contracts.

The data shows that in the vast majority of cases, institutions apply environmental criteria when making a decision concerning a financial transaction. Almost 75% of the respondents require that environmental liability, exposure or risk be considered in all equity financing decisions equal to or greater than a specified financial value. The comparable number for debt financing is over 80%.

Debt	Equity	Environmental Exposure Evaluated Prior to Decision
55%	57%	All transactions
26%	17%	Transactions above specific financial value
19%	26%	No transactions

2. Rejected or defaulted loan and investment data

Since many respondents indicated that the method used to track credit/investment decisions does not allow for statistical review, it was not possible to collect data on this topic. Many deals are rejected for multiple reasons. Environmental issues may not have been the compelling reason for the rejection of a transaction, but, nonetheless, may have contributed to the decision. In many cases, deals with environmental problems are simply not presented for consideration, or after identifying problems, the deal is significantly restructured so that it passes the formal environmental criteria.

As to foreclosure activity, if a serious problem is identified with a loan, the property will often not be assumed to be under foreclosure proceedings. Instead, the property may be sold at a discounted price. Alternatively, an arrangement will be made with the borrower to resolve the lender's concerns and issues as they pertain to the environment.

3. Contractual covenants and conditions

After environmental site assessments and screening criteria, contractual covenants appear to be the most widely used tool by the respondents for managing and controlling environmental risk. Fifty-five percent (55%) of the respondents stated that they include specific environmental covenants and conditions that directly assess a borrower's environmental performance and activities within their basic contractual agreements.

4. Monitoring of clients' activities post-contract closing

In contrast to the increased effort institutions are making to consider environmental issues when performing upfront credit risk assessments or when preparing a contractual closing covenant, much less attention is 'given to those same issues.' 'once the - financial institution actually commits funds. When the respondents were asked how often and to what extent they maintain any form of ongoing environmental monitoring the results were as follows:

Type of transaction	Monitor more often than yearly	Monitor yearly	Monitor less often than yearly	Never monitor
Loan	1%	27%	26%	46%
Investment	3%	19%	29%	49%

C Environmental Regulations/Guidelines

(Section II of the survey)

For the most part, environmental regulations that affect the operations of financial institutions are national, or in many instances even local, in scope. Few, if any, international environmental regulations, conventions or treaties directly affect the financial services industry. In addition, a few questions examined how institutions stay current on regulations and requirements in other countries in which they have clients and business activities.

1. Existence of regulations and guidelines

Surprisingly 33% of all respondents felt that they were not subject to any regulations or guidelines (i.e., legislative, governmental, nongovernmental, or multilateral bank).

2. Requirements

The activity most often mandated by governmental as well as nongovernmental bodies is the performance of an environmental credit risk analysis. Environmental audits were identified as the next most commonly required activity.

3. Complying with regulations and the need for assistance to comply more fully

The majority of institutions indicated a need for some form of assistance to improve their ability to comply with regulatory requirements. The most commonly requested areas where government or multilateral organizations could help are presented in the following table.

Type of assistance needed	To comply with	
	Government Requirements	Non-Governmental Requirements
Better training for staff	69%	81%
Easier to follow regulations/guidelines	67%	42%
Better data on financial exposure	55%	46%

Increasing regulation is a concern for respondents. Twothirds of the respondents believed that environmental regulations and guidelines will become stricter in the future, and three quarters of the respondents feel that it will be at least slightly difficult to comply with stricter regulations. In contrast, only 52% rated compliance with current regulation as at least slightly difficult. Currently, respondents have a greater focus on domestic regulations (tracked by 88%) than foreign regulations (tracked by 54%).

4. Monitoring and tracking - domestic and international efforts

Institutions appear to be fairly aggressive in seeking out and identifying the various environmental requirements affecting them in their home-country. On the six point scale, the average rating by respondents when asked how often they sought out information on domestic environmental regulations was 4.40; only 12% responded "seldom" or "never." In contrast, only 54% of the respondents indicated that they make any attempt to stay current on environmental regulations in other countries; the remaining 46% make no attempt.

D. Statement by Banks on the Environment and Sustainable Development

(Section V of the survey)

This section addressed the respondent's familiarity with, and behaviors in regard to the UNEP sponsored *Statement by Banks on the Environment and Sustainable Development*, introduced in May, 1992. Two separate versions of this section were prepared and distributed according to whether a respondent was a signatory to the Statement or not. Of the respondents 22% were signatories and 78% were not.

Signatories - Among those respondents that signed the Statement, the survey detected a slight increase in the scope of environmental activities since becoming signatories. On a six- point rating scale (6=increased it greatly, 5=increased it somewhat, 4=increased it slightly, 3=decreased it slightly, 2=decreased it somewhat and 1=decreased it greatly), the average response to this question was 4.31.

Non-Signatories - In general, the non-signatories were unfamiliar with the Statement. Only 30% noted that they had some awareness of its content, while 35% indicated that they were completely unaware of its existence.

E. Future (Section IV of the survey)

The questions in this part of the survey closely matched those in the initial section on current environmental activities. There was, however, one major difference. The questions were designed to elicit projective, not factual responses.

Many of the questions looked in this section were also analyzed based on stage of financial market development and geography. The trend throughout this section is that over time there appears to be little difference between those respondents who feel the environment currently has a great impact on their present operations versus those who believe the impact to be only slight. This view held consistent when other various sub-populations were subjected to the same analysis. In general, each sub-population will, over time, increase their focus and work on both core and non-core banking activities that relate to the environment. For detailed comparisons based on stage of development and geography see pages 5 - 8 of Appendix B.

1. Focus on environmental issues

The respondents believe that environmental issues will continue to play an increasing role in their industry. The overall level of involvement is projected to progressively increase over the next 15 years. The table below presents the responses to a question that asked about the likelihood of the institution increasing its focus on environmental issues over the next 1, 3, 5, and 15 years. Respondents were asked to use a six-point scale (6=very likely, 5=likely, 4=somewhat likely, 3=somewhat unlikely, 2=unlikely and 1=very unlikely).

Number of years into the future	Average Response	% Responding 6 or 5'
1 year	4.27	41%
3 years	4.88	53%
5 years	4.94	89%
15 years	5.19	80%

2. Credit risk management

Several specific questions focused on the adoption of environmentally-related credit risk management practices over the next five years. The activities listed in this section were identical to those asked under Section 1 of the survey, which focused on current environmental activities. The responses to the two sets of questions (current and future) were compared and are shown below.

Rating of current activities	Rating of likelihood in 5 years	Activity
4.01	4.86	Environmental Impact Assessments
3.98	4.82	Environmental Credit Risk Analysis or Audit
2.99	3.82	Adding environmental criteria to the credit review process

3. Lending investment strategy

The average response to a four-part question asking about the firm's likelihood of funding environmentally-related businesses during the next fifteen years is shown below. As noted earlier, as the time horizon lengthens, more institutions are likely to anticipate pursuing investment and lending opportunities in the environmental services industry.

Number of years into the future	Average Response	% Responding 6 or 5
1 year	3.91	31%
3years	4.31	44%
5 years	4.62	61%
15 years	4.87	88%

And we see similar projected increases in the adoption of specific environmental core banking activities over the next 5 years as compared with what is being currently pursued.

Rating of current activities	Rating of likelihood in 5 years	Activity	Regulatory Change	Government Requirements	Non-Governmental Requirements
3.47	4.55	Loan to or invest in firms that focus on environmental technologies	Will get stricter	67%	68%
2.85	3.99	Targeting of loans/lines of credit for environmental firms	Will not change significantly	29%	26%
2.01	3.00	Joint ventures with Development Banks	Will get easier	4%	5%
1.76	2.90	Targeting environmentally related venture capital funds			

4. Educating staff, customers and the general public

Rating of current activities	Rating of likelihood in 5 years	Activity
4.10	4.83	Educating staff about the environment
2.83	3.66	Educating customers about the environment
2.21	3.07	Educating the public about the environment

5. Recycling, resource and energy conservation, and procurement procedures

Rating of current activities	Rating of likelihood in 5 years	Activity
4.44	5.14	Energy conservation
4.19	4.87	Recycling
3.94	4.90	Resource reduction and resource reuse
3.31	4.43	Adding environmental criteria to all procurement decisions

6. Regulatory situation

The majority of responding institutions believe that the regulatory climate will grow stricter over the next five years, and that compliance will become more difficult. The overall opinion on how regulation is anticipated to change over the next five years is indicated below:

Whereas 18% of the respondents noted that regulatory compliance is now very easy (see Section V.C.3 of this report), 0% believe it will be equally as easy in the future. The overwhelming majority of respondents (75%) believe that it will be at least somewhat difficult - for institutions to fully comply with environmental regulations expected to exist in five years.

V. CONCLUSIONS AND IMPLICATIONS

A. Conclusions

1. From an environmental perspective, the financial services industry is placing greater emphasis on non-core banking programs (e.g., recycling and energy efficiency) than on core banking activities.

2. Environmental risk management, from a debt financing perspective, has become accepted by banking leaders as part of the basic credit process in virtually all industrial countries and most transitional economies.

3. Involvement with environmental activities crosses all geographic regions of the world's industrialized economies. North American institutions are the most focused on risk management processes and tools, and European institutions are leading the way on identifying environmentally-related new business opportunities.

4. Environmental issues presently appear to play little role when it comes to equity financing.

5. The industry is looking for simpler regulations and guidelines.

6. The attention which environmental activities now receive appears to have little or no relationship to whether institutions have a formal policy or if they signed the UNEP Statement.

7. The industry, in general, has a need for more meaningful analytical data and risk quantification tools.

8. Regardless of their current perspective, geographic base, or stage of financial market development, all respondents, believed environmental issues will receive more attention and become increasingly integrated with core business activities over the next fifteen years. In particular, financial institutions will be more likely -to look for transactional opportunities with environmentally-related businesses

B. Implications

1. Individual institutions will need to continue to expand environmental initiatives, especially as they relate to core banking activities.

2. The industry needs to extend the practices already in place in industrial economies to many transitional economies and all developing countries.

3. Institutions need to explore more seriously the revenue side of the equation (e.g., brown development, IPOs, renewable energy, pollution prevention) rather than focus on risk management only.

4. The industry's investment banking side needs to broaden their focus to include effective approaches to address environmental issues on the equity side.

5. National governments and multilaterals have a key role to play in creating "global" guidelines/regulations that would simplify the bankers' approach to crossborder transactions while also setting the stage for an even" playing field.

6. In general, more information needs to be gathered as to the industry's requirements in the areas of risk management, credit analysis, training and modeling.

7. There is a very clear and significant need for more sophisticated, empirically-based risk management tools.

8. Given the regional differences in focus and

activities, the overall industry, and in turn the environment, would benefit from a global industry wide exchange of information on environmental policies and practices.

9. Industry leaders from both the private and public sectors should attempt to accelerate, where possible, the trends outlined in this report.

Understanding the reasons behind these findings is an important next step in creating a process for the banking industry to focus more on these issues. And a better understanding of these issues will be needed as the industry becomes more deeply involved in the issues of effective resource utilization by its clients and, the pressing question of how to achieve sustainable development on a global basis.

VI. APPENDICES

A. Survey

B. Key Geographic and Financial Market Development Relationships

C. Respondents

D. Project Team

APPENDIX A

UNEP SURVEY ON ENVIRONMENTAL POLICIES AND PRACTICES

Respondent:

I. CURRENT ENVIRONMENTAL ACTIVITIES

1. To what extent do you believe that environmental issues affect your institution? (Please check (V) one response.)

Greatly Somewhat Slightly Not at all

2. Does your firm have a documented environmental policy? (Please check (✓) your response.)

Yes **If Yes**, how long have you had a documented policy? years months

No

3. How many of the firms' employees have environmentally-related responsibilities as a major component (greater than 50%) of their job descriptions (e.g. environmental credit risk analysis, major recycling initiatives, environmental industry analysis for your institution or clients)? Number of employees:

4. Does your institution have an environmental department/function? (Please check (I) your response and fill in numbers where requested.)

Yes **If Yes**, how many employees are in the department/function?

What level is the head of the department or function:

- Above a Vice President
- Vice President
- Below a Vice President

No **If No**, how many employees in the firm devote at least 50% of their time to environmental concerns?

5. Rate how often your firm engages in each of the following activities which address environmental issues. (Please circle the number which corresponds to your rating.)

Regularly Often Sometimes Occasionally Seldom Never

6 5 4 3 2 1

- 6 5 4 3 2 1 Environmental Impact Assessments
- 6 5 4 3 2 1 Environmental Credit Risk Analysis or Audit (site or firm assessment)
- 6 5 4 3 2 1 Seek Information on Environmentaji Regulations
- 6 5 4 3 2 1 Loan to or invest in firms that focus on Environmental Technologies
- 6 5 4 3 2 1 Joint Ventures with Development Banks
- 6 5 4 3 2 1 Environmentally related venture capital fund(s)

6. Rate your firm's current level of involvement in each of the following environmental efforts. (Please circle the number which corresponds to your rating.)

	Very involved	Often involved	Sometimes involved	Occasionally involved	Seldom involved	Never involved	
	6	5	4	3	2	1	
6 5 4 3 2 1							Targeting of loans/lines of credit for environmental firms
6 5 4 3 2 1							Supporting economic development in the communities where you operate
6 5 4 3 2 1							Adding environmental criteria to the credit review process
6 5 4 3 2 1							Educating staff about the environment
6 5 4 3 2 1							Educating customers about the environment
6 5 4 3 2 1							'Educating the public about the environment
6 5 4 3 2 1							Recycling
6 5 4 3 2 1							Energy conservation
6 5 4 3 2 1							Resource reduction and resource reuse
6 5 4 3 2 1							Adding environmental criteria to all procurement decisions

II. ENVIRONMENTAL REGULATIONS/GUIDELINES

7. Are there any governmental (i.e. national, regional, or local) environmental regulations with which your firm must comply in the conduct of its basic business (e.g. investments and the extension of credit)? (Please check (✓) your response.)

Yes No

8. Are there non-governmental organizations that you work with that require you to comply with some form of Environmental Guidelines? (Please check (✓) your response.)

Yes No (If No, skip to question 9)

If Yes, please check (✓) each of the following organizations with which you work which require you to comply with some form of Environmental Guidelines:

- The World Bank
- International Finance Corporation
- The European Bank for Reconstruction and Development
- Other Development Banks
- Non-Governmental Groups or Agencies
- Private Banking Partners
- Private Multinational Corporations
- Trade Associations/Industry Groups

The remaining portion of this section covers both Governmental Environmental Regulations and non-Governmental Organizations' ("NGO") Environmental guidelines with which you need to comply. Each section will have two columns for your responses: the first column is for your response in regard to your government's regulations and the second column is for responses related to NGO Guidelines.

9. Indicate if you are required to perform any of the following: (Please check (✓) all that apply.)

- | <u>Govt</u> | <u>NGO</u> | |
|--------------------------|--------------------------|------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | Environmental Audits |
| <input type="checkbox"/> | <input type="checkbox"/> | Environmental Impact Assessments |
| <input type="checkbox"/> | <input type="checkbox"/> | Environmental Credit Risk Analysis |

10. When fuWilling your government's environmental regulatory obligations and non-governmental environmental guidelines, who performs the work? (Please check (✓) your response(s).)

- | <u>Govt</u> | <u>NGO</u> | |
|--------------------------|--------------------------|-----------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | Your Employees/Consultants |
| <input type="checkbox"/> | <input type="checkbox"/> | Requiring Organization |
| <input type="checkbox"/> | <input type="checkbox"/> | Third Party selected for Govt by: |
| <input type="checkbox"/> | <input type="checkbox"/> | Third Party selected for NGO by: |

11. How difficult do you feel it is for your firm to comply with present regulations or guidelines? (Please check (✓) your response(s).)

Govt NGO

- Very difficult to comply
- Somewhat difficult to comply
- Slightly difficult to comply
- Slightly easy to comply
- Somewhat easy to comply
- Very easy to comply

12. Of the following types of assistance, which ones could you use to better comply with the regulations/guidelines. (Please check (✓) all that apply.)

Govt NGO

- Better training for staff
- Easy to follow (non-technical) guides or manuals
- Standard forms for staff to fill out
- Direct, on-site assistance by trained environmental professionals
- Better data on environmental financial risk
- Computer models to help quantify the financial risk
- Computer models to help quantify the environmental impact
- Easier to follow regulations/guidelines

13a. Please rate how you think the environmental regulatory situation, as it relates to financial institutions, will change in the next 5 years? (Please check (✓) only one response in each column.)

Govt NGO

- It will get stricter
- It won't change significantly
- It will be eased

13b. If the regulatory environment were to BECOME MORE STRINGENT, how difficult would your firm find it to comply? (Please check (✓) only one response in each column.)

Govt NGO

- Very difficult to comply
- Somewhat difficult to comply
- Slightly difficult to comply
- Slightly easy to comply
- Somewhat easy to comply
- Very easy to comply

14a. Do you stay current on environmental policies and practices in other countries? (Please check (✓) your response.)

Yes (continue with 14b.) No (go to 14d.)

14b. If you do, which of the following do you focus on? (Please check (✓) all that apply.)

- Guidelines
- Regulations
- Industry Practices
- Codes of Conduct
(continue with question 14c.)

14c. If you do, what means do you use to stay current? (Please check (✓) all that apply.)

- Government publications
- World Bank publications
- Industry publications
- Colleagues in the industry
(continue with SECTION III- ENVIRONMENTAL LIABILITY, EXPOSURE or RISK)

14d. If you don't stay current, why not? (Please check (✓) all that apply.)

- Don't feel we need to
- Don't think it is critical to conduct our business
- Not sure how to go about it Other(please specify)

**III. ENVIRONMENTAL LIABILITY,
EXPOSURE OR RISK**

15. Are environmental liabilities, exposure or risk taken into account for: (Please check (✓) one response in each column.)

- | | | |
|--------------------------|--------------------------|---|
| <u>Loans</u> | <u>Investments</u> | |
| <input type="checkbox"/> | <input type="checkbox"/> | All |
| <input type="checkbox"/> | <input type="checkbox"/> | LOANS greater than or equal to
<input type="checkbox"/> (please specify minimum amount) |
| <input type="checkbox"/> | <input type="checkbox"/> | INVESTMENTS greater than or equal to <input type="checkbox"/> (please specify minimum amount) |
| <input type="checkbox"/> | <input type="checkbox"/> | None |

16. Of all loans and/or investments declined through May of 1994, how often has your firm rejected loans or refused investments due to environmental liabilities, exposure or risk? (Please check (✓) one response in each column.)

- | | | |
|--------------------------|--------------------------|--|
| <u>Loans</u> | <u>Investments</u> | |
| <input type="checkbox"/> | <input type="checkbox"/> | Often (5% or more of those declined) |
| <input type="checkbox"/> | <input type="checkbox"/> | Sometimes (2A% of those declined) |
| <input type="checkbox"/> | <input type="checkbox"/> | Seldom (1% or fewer of those declined) |
| <input type="checkbox"/> | <input type="checkbox"/> | Never (has not declined based on environmental considerations) |

17. In your loan agreements, are there any environmental covenants or conditions tied to borrower's performance and activities? (Please check (✓) your response.)

- Yes No

18. As part of your ongoing LOAN monitoring how often do you require any of the following? (Please circle your response.)

- | | | | | | |
|---------|------------------------|--------|------------------------|--------------|---|
| | More often than yearly | Yearly | Less often than yearly | Not required | |
| | 4 | 3 | 2 | 1 | |
| 4 3 2 1 | | | | | Any form of periodic environmental update |
| 4 3 2 1 | | | | | Periodic environmental assessments |
| 4 3 2 1 | | | | | Periodic environmental audits |
| 4 3 2 1 | | | | | Periodic environmental compliance updates |

19. As part of your ongoing INVESTMENT monitoring how often do you require any of the following? (Please circle your response.)

- | | | | | | |
|---------|------------------------|--------|------------------------|--------------|---|
| | More often than yearly | Yearly | Less often than yearly | Not required | |
| | 4 | 3 | 2 | 1 | |
| 4 3 2 1 | | | | | Any form of periodic environmental update |
| 4 3 2 1 | | | | | Periodic environmental assessments |
| 4 3 2 1 | | | | | Periodic environmental audits |
| 4 3 2 1 | | | | | Periodic environmental compliance updates |

20. For all your problem loans and investments, how many have been problems because of environmental factors?

- | | | |
|--------------------------|--------------------------|------------|
| <u>Loans</u> | <u>Investments</u> | |
| <input type="checkbox"/> | <input type="checkbox"/> | One |
| <input type="checkbox"/> | <input type="checkbox"/> | 2-5 |
| <input type="checkbox"/> | <input type="checkbox"/> | 6. 10 |
| <input type="checkbox"/> | <input type="checkbox"/> | 11 - 25 |
| <input type="checkbox"/> | <input type="checkbox"/> | 26 or more |

21. Has your firm experienced any financial liability or been held financially responsible for any remediation of environmental problems associated with its defaulted loans or investments? (This includes out of court financial settlements.)

Yes No

	Very likely (almost always)	Likely	Somewhat likely	Somewhat unlikely	Unlikely	Very unlikely (almost never)
1 year	6	5	4	3	2	1
3 years	6	5	4	3	2	1
5 years	6	5	4	3	2	1
15 years	6	5	4	3	2	1

22. Has your firm experienced any loan defaults by borrowers where you firm' has been forced to foreclose or decided not to foreclose due to environmental issues (e.g. remediation and upgrading costs overwhelming, non-compliance with environmental regulations resulting in borrower's loss of license)?

Yes No

If **YES**, how- many defaults would you say were due to environmental issues?

One 2-5 6-10 11-25 26 or more

IV. FUTURE

23. Rate how likely your firm is to become more attentive to environmental issues in the future. (Please circle the number which best represents your rating for each time period)

	Very likely (definitely)	Likely	Somewhat likely	Somewhat unlikely	Unlikely	Very unlikely (not at all)
1 year	6	5	4	3	2	1
3 years	6	5	4	3	2	1
5 years	6	5	4	3	2	1
15 years	6	5	4	3	2	1

24. Rate your firms' likelihood to seek out opportunities to invest in or extend credit to environmentally-related businesses (e.g. water treatment facilities, recycling ventures, new environmental technologies) in the future. (Please circle the number which best represents your likelihood of participation in each time frame.)

25. Rate how likely your firm is to participate **REGULARLY** in each of the following environmental activities within the next five years. (Please circle the number which best represents your likelihood of participation in each activity.)

	Very likely (definitely)	Likely	Somewhat likely	Somewhat unlikely	Unlikely	Very unlikely (not at all)
6 5 4 3 2 1	6	5	4	3	2	1
6 5 4 3 2 1	6	5	4	3	2	1
6 5 4 3 2 1	6	5	4	3	2	1
6 5 4 3 2 1	6	5	4	3	2	1
6 5 4 3 2 1	6	5	4	3	2	1
6 5 4 3 2 1	6	5	4	3	2	1
6 5 4 3 2 1	6	5	4	3	2	1
6 5 4 3 2 1	6	5	4	3	2	1

26. Rate your firm's likelihood of becoming more involved with each of the listed activities in the next five years. (Please circle the number which best represents your firm's likelihood of participation in each activity.)

Very likely (definitely)	Likely	Somewhat likely	Somewhat unlikely	Unlikely	Very unlikely (not at all)
6	5	4	3	2	1

- 6 5 4 3 2 1 Targeting of loans/lines of credit for environmental firms
- 6 5 4 3 2 1 Supporting economic development in the communities where you operate
- 6 5 4 3 2 1 Adding environmental criteria to the credit review process
- 6 5 4 3 2 1 Educating staff about the environment
- 6 5 4 3 2 1 Educating customers about the environment
- 6 5 4 3 2 1 Educating the public about the environment
- 6 5 4 3 2 1 Recycling
- 6 5 4 3 2 1 Energy conservation
- 6 5 4 3 2 1 Resource reduction and resource reuse
- 6 5 4 3 2 1 Adding environmental criteria to all procurement decisions

V. STATEMENT BY BANKS ON THE ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

27. Rate your familiarity with the UNEP-sponsored "Statement by Banks on the Environment and Sustainable Development." (Please circle the number which best represents your level of familiarity.)

Very familiar	Somewhat familiar	Slightly familiar	Slightly unfamiliar	Somewhat unfamiliar	Not familiar at all
6	5	4	3	2	1

28. The statement is allached. Please read the statement and rate your firms' level of agreement with the statement. (Please circle your response.)

Agree completely	Agree somewhat	Agree slightly	Disagree slightly	Disagree somewhat	Disagree completely
6	5	4	3	2	1

29. If you were asked to sign the statement, rate your firm's likelihood of signing it within the next year. (Please circle your response.)

Very likely	Somewhat likely	Slightly likely	Slightly unlikely	Somewhat unlikely	Very unlikely
6	5	4	3	2	1

NON-SIGNATORIES

V. STATEMENT BY BANKS ON THE ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

27. Has information on your firm's signing of the UNEP statement be disseminated/publicized: (Please check (/) your response to each item.)

- Throughout your organization/ to employees? Yes No
- To your customers? Yes No
- To the general public? Yes No

28. Rate how signing the UNEP Statement has affected the environmental activity at your firm? (Please circle the number which best represents your response.)

Increased it greatly	Increased it somewhat	Increased it slightly	Decreased it slightly	Decreased it somewhat	Decreased it greatly
6	5	4	3	2	1

29. Please use the six point scale below to rate how likely your firm would be to sign another UNEP statement which included specific/numeric goals or guidelines for each of the listed activities. (Please circle a likelihood rating for each activity.)

Very likely	Likely	Somewhat likely	Somewhat unlikely	Unlikely	Very unlikely	
6	5	4	3	2	1	
6	5	4	3	2	1	Targeting of loans/lines of credit for environmental firms
6	5	4	3	2	1	Supporting economic development in the communities where you operate
6	5	4	3	2	1	Adding environmental criteria to the credit review process
6	5	4	3	2	1	Educating staff about the environment
6	5	4	3	2	1	Educating customers about the environment
6	5	4	3	2	1	Educating the public about the environment
6	5	4	3	2	1	Recycling
6	5	4	3	2	1	Energy conservation
6	5	4	3	2	1	Resource reduction and resource reuse
6	5	4	3	2	1	Adding environmental criteria to all procurement decisions

SIGNATORIES

APPENDIX B

LEGEND KEY

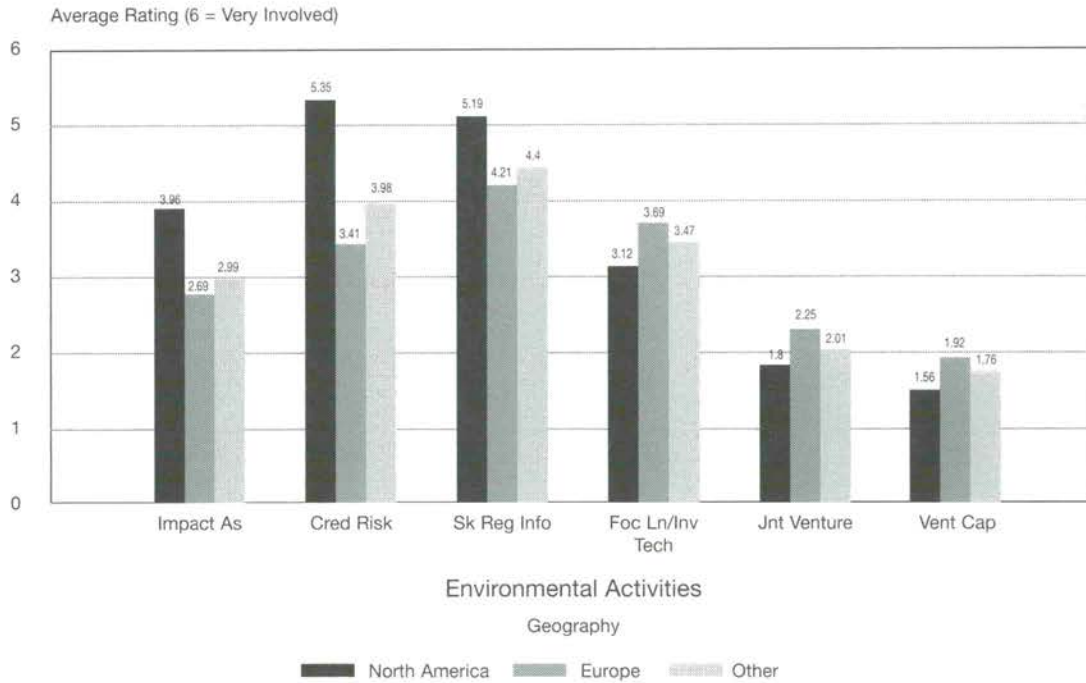
Pages 1, 3, 5 and 7

Impact Ass	Environmental Impact Assessments
Credit Risk	Environmental Credit Risk Analysis (Site or firm)
Sk Reg Info	Seek Information on Environmental Regulations
Foc LN/Inv Tech	Loan/Invest in firms focused on environment technologies
JNT Venture	Joint ventures with development banks
Vent Cap	Environmentally related venture capital funds

Pages 2, 4, 6, and 8

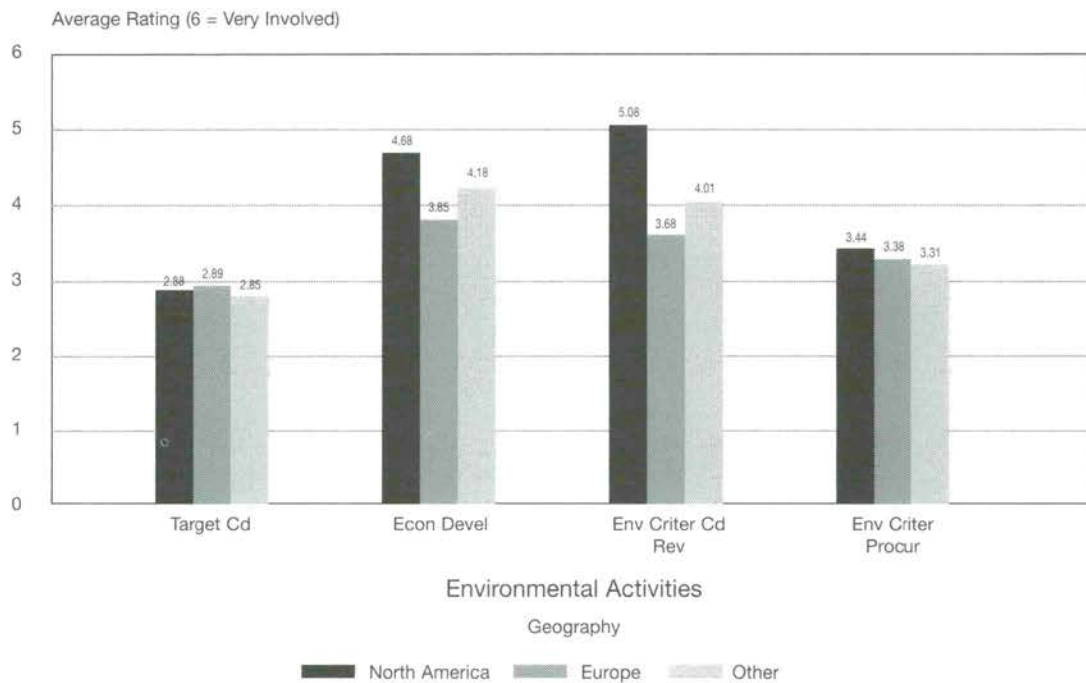
Target CD	Targeting of loans/lines of credit for environmental firms
Econ Devel	Supporting economic development in local community
Env Criter Cd Rev	Environmental criteria in credit review process
Env Criter Procur	Environmental criteria in procurement process

Relationship Between Geography and Current Environmental Activities



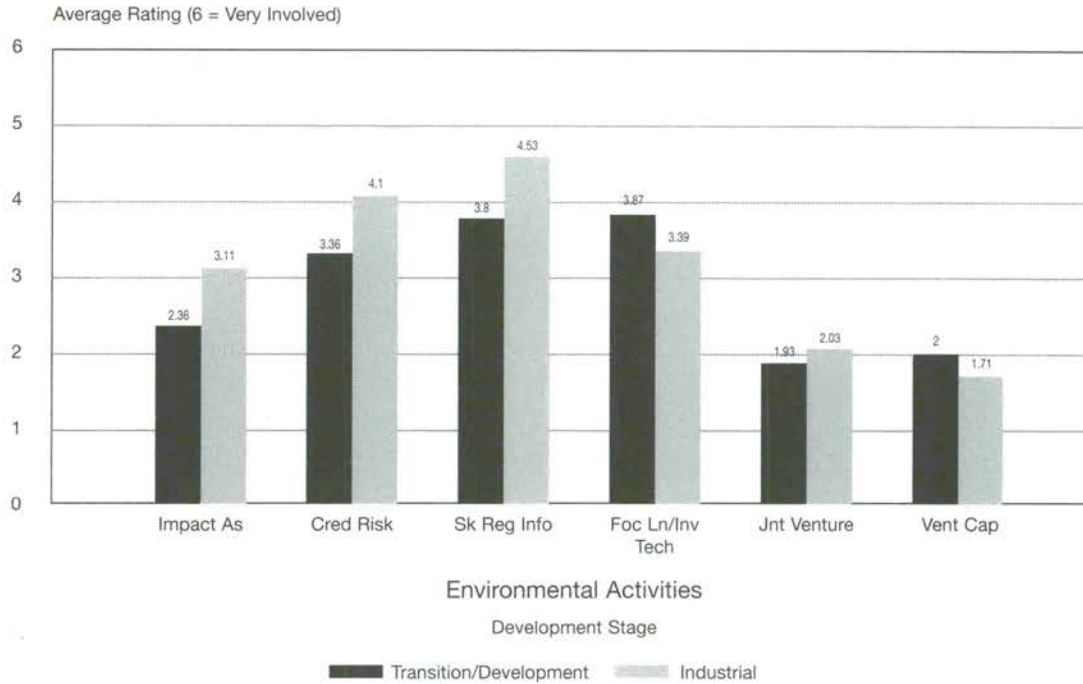
Respondents - 88

Relationship Between Geography and Current Environmental Activities



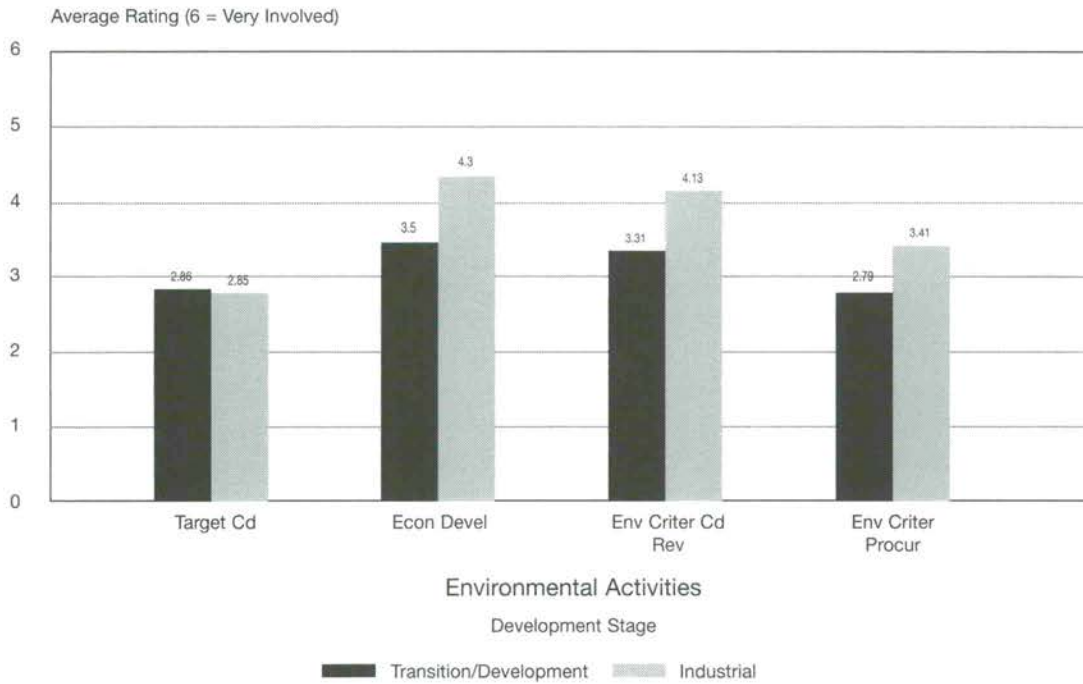
Respondents - 88

Relationship Between Stage of Economic Development and Current Environmental Activities



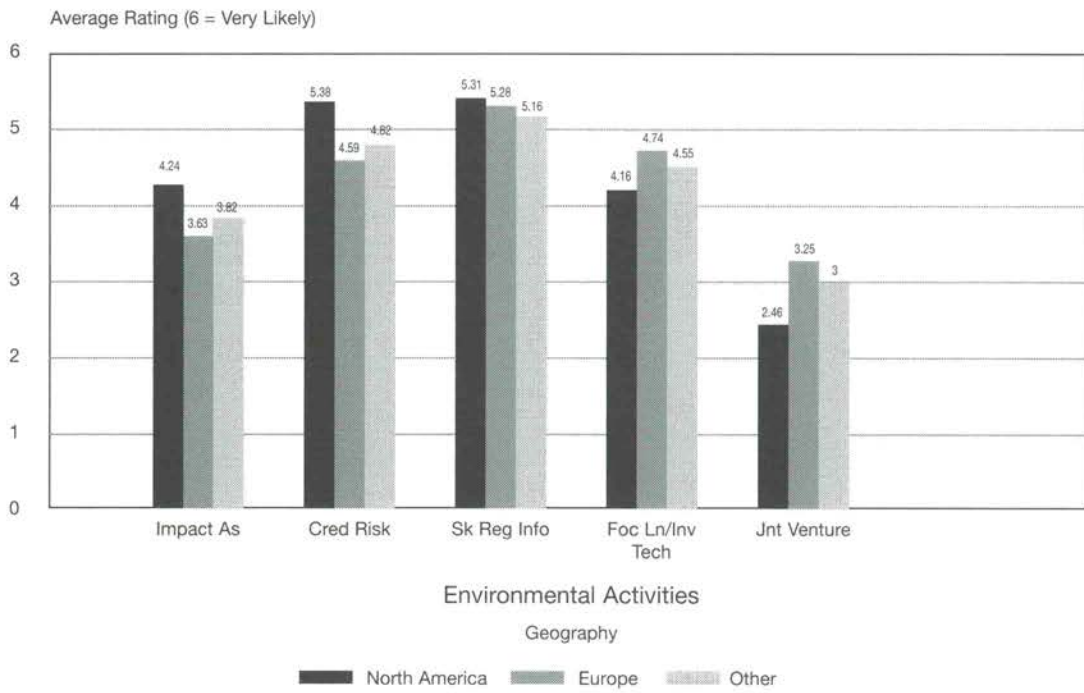
Respondents – 88

Relationship Between Stage of Economic Development and Current Environmental Activities



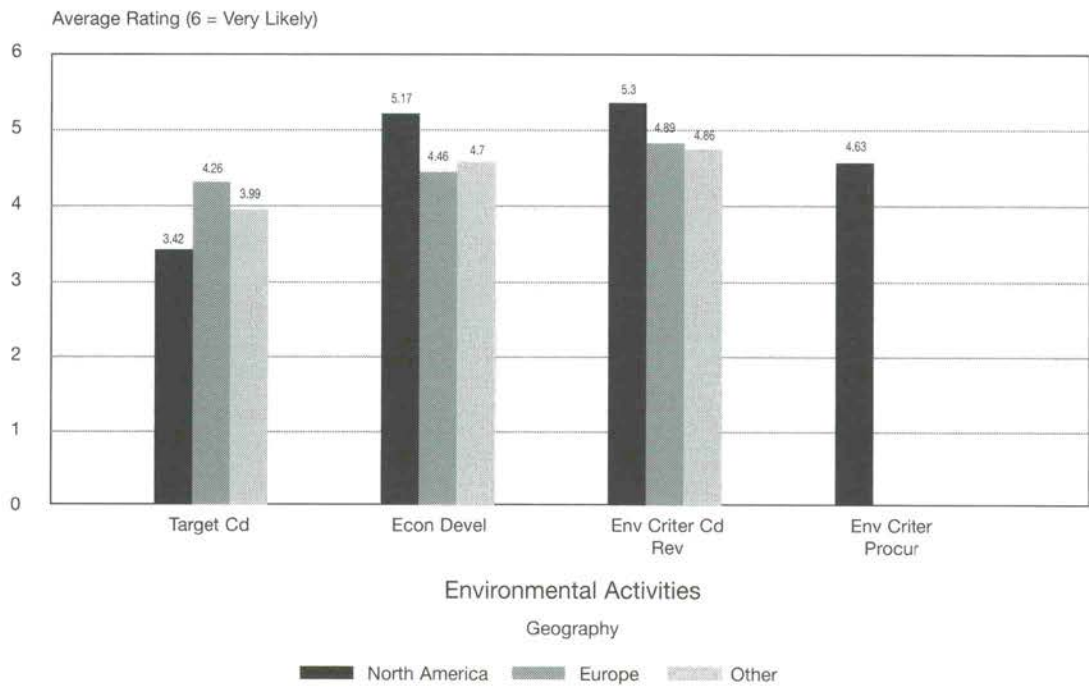
Respondents – 88

Relationship Between Geography and 5 Year View of Environmental Activities



Respondents - 84

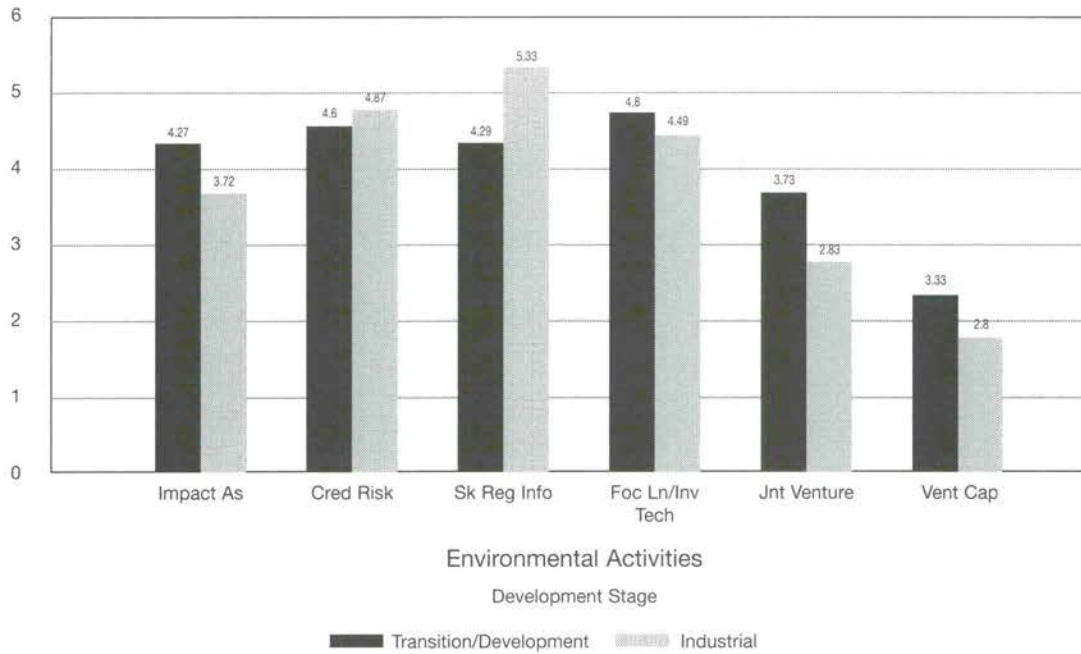
Relationship Between Geography and 5 Year View of Environmental Activities



Respondents - 84

Relationship Between Stage of Economic Development and 5 Year View of Environmental Activities

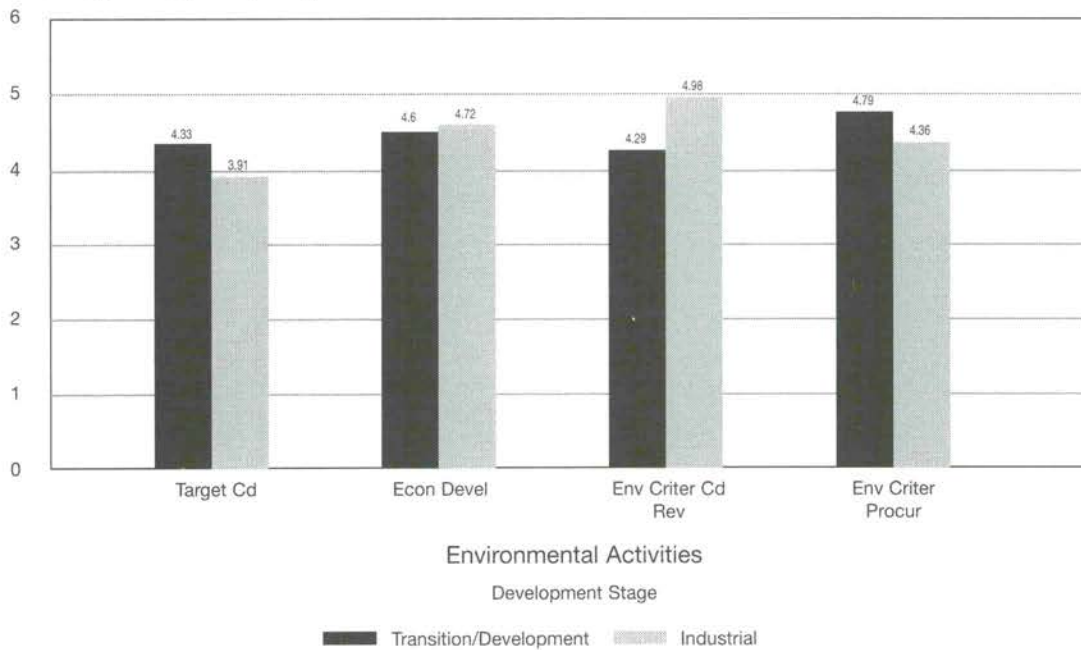
Average Rating (6 = Very Likely)



Respondents – 84

Relationship Between Stage of Economic Development and 5 Year View of Environmental

Average Rating (6 = Very Likely)



Respondents – 84

APPENDIX C

List of Respondents

Bank Name	Location		
INDUSTRIAL ECONOMIES			
Commonwealth Bank of Australia	Australia	Banco Central Hispano Americano	Spain
National Australia Bank Limited	Australia	Caja de Madrid	Spain
Westpac Banking Corp.	Australia	Nordbanken	Sweden
Arab Banking Corporation (BSC)	Bahrain	S-E Banken	Sweden
Bank Russels Lambert	Belgium	Svenska Handelsbanken	Sweden
Kredietbank N.V.	Belgium	Swedbank	Sweden
Bank Montreal	Canada	Credit Suisse	Switzerland
Bank of Nova Scotia	Canada	Swiss Bank Corp.	Switzerland
Canadian Imperial Bank of Commerce	Canada	Union Bank of Switzerland	Switzerland
Royal Bank of Canada	Canada	Abbey National Plc	U.K.
Unibank A/S	Denmark	Bank of Scotland	U.K.
Union Bank of Finland	Finland	Barclays Bank	U.K.
Bayerische Hypotheken- und Wechelsbank	Germany	HSBC Holdings Plc	U.K.
Bayerische Landesbank	Germany	Lloyds Bank	U.K.
Bayerische Vereinsbank AG	Germany	National Westminster Bank Plc	U.K.
Berliner Bank	Germany	The Royal Bank of Scotland Plc	U.K.
Commerzbank	Germany	BankAmerica Corporation	U.S.
Deutsche Bank AG	Germany	Barnett Banks	U.S.
KFW – Financial Corporation	Germany	Chase Manhattan Bank	U.S.
Kreditanstalt fuer Wiederaufbau	Germany	Chemical Bank	U.S.
Landesbank Schleswig-Holstein Girozentrale	Germany	Citicorp	U.S.
Westdeutsche Landesbank	Germany	Comerica Incorporated	U.S.
The Bank of East Asia, Limited	Hong Kong	First Bank System	U.S.
AIB Bank	Ireland	First Fidelity	U.S.
Bank of Ireland	Ireland	First Union Corporation	U.S.
Bank Hapoalim	Israel	Fleet Bank	U.S.
Banco Ambrosiano Veneto	Italy	Industrial Bank of Japan (New York branch)	U.S.
CARIPL0 (Cassa di Risparmio Delle Provincie Lombarde SpA)	Italy	Mellon Bank	U.S.
Istituto Bancario San Paolo di Torino	Italy	Michigan National Bank	U.S.
Nomura Securities	Japan	Morgan Stanley Realty	U.S.
The Bank of Tokyo Ltd	Japan	NBD Bank, NA	U.S.
The Chuo Trust & Banking Co., Ltd	Japan	PNC Bank	U.S.
The Long-Term Credit Bank of Japan	Japan	Salomon Inc.	U.S.
The Shoko ChukinBank	Japan	Shawmut Bank	U.S.
ABN AMRO	Netherlands	Society National Bank	U.S.
Banco Bilbao Vizcaya	Spain	USNBO	U.S.
		Wachovia Bank of North Carolina	U.S.
TRANSITIONAL ECONOMIES			
		K&H Bank	Hungary
		Korea Development Bank	Korea
		Banco Nacional de Mexico, S.A. (Banamex)	Mexico
		Bancomer	Mexico

Banque Marocaine du Commerce Exterieur	Morocco
Bank of Philippine Islands	Philippines
Bank Handlowy w Warszawie S.A.	Poland
Powszechny Bank Kredytowy S.A. w Szczecinie	Poland
Tokobank	Russia
First Commercial Bank	Taiwan
Hua Nan Corporation	Taiwan
Taipei Bank	Taiwan
Taiwan Business Bank	Taiwan
Taiwan Cooperative Bank	Taiwan

DEVELOPING ECONOMIES

Bank of Ayudhya Plc	Thailand
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Kaspar Müller
Partner Ellipson Limited

A NEW REPORT FROM THE BCSD
to be published at the beginning of 1995

**Mobilizing the Financial Markets to Promote
Eco-Efficiency**

The United Nations Conference on Environment and Development held in Rio has created the basis for a major shift towards putting the world on the path of a sustainable future. This goal requires the active involvement of business and industry. The BCSD is actively involved in this process.

Financial Markets play a crucial role in most economies of the world. But it is not clear how they now contribute to a sustainable development nor how they can be mobilized to do so.

The BCSD intends to publish a comprehensive report which will provide a general overview of all the main issues and participants of Financial Markets and illuminate the interactions between them. The report will cover the perspectives of companies, financial analysts, and investors together with the governing framework, existing regulations, and main trends. In this context the report will also investigate the influence of the most important agencies and institutions.

Sustainable development means improving Eco-efficiency. In this respect companies have done a great deal on their own. Many examples show this. However, a great deal remains to be done. The path towards sustainable development requires enormous capital investment and expenditure. Consequently, more support from the financial markets is urgently needed.

In general, financial markets has a strong influence on companies' decisions since assets are valued by markets. Financial markets measure performance by the enhancement of values. Therefore, companies with convincing value-creating strategies are rewarded with higher capitalisations. However, it does not seem that the same is true for companies

with sustainable strategies since it is obvious that the «The Financial Markets» have not played a leading part in supporting the progress of companies to become eco-efficient. Therefore, the main question is why financial markets do not respond more "price-sensitively" to eco-efficiency.

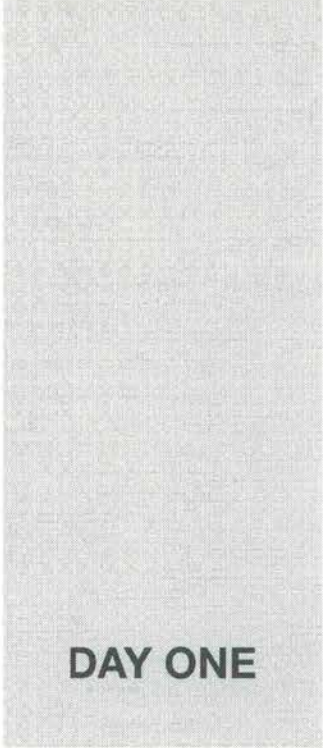
Other questions to be answered in the report include:

- What should be done to accounting systems to have them promote sustainable development? What new concepts exist already? Are more disclosures necessary?
- What might be the role of rating and auditing in recognizing eco-efficient companies?
- What influence do the applied investment and financing decisions have on the environmental performance of companies? What might be the role of a consistent application of cost accounting?
- What is the significance of discounting where the future is worth less than the present and what role can option valuation models play?
- How might emerging markets be affected and how might they benefit?

It is important for business leaders to take an active role. The BCSD, therefore, has established a Task Force to mobilize the financial markets to promote Eco-efficiency. The Task Force is co-chaired by Mr. Stephan Schmidheiny and Mr. Federico Zorraquin. The research and work will be done by an international Working Group. A Swiss consulting company, Ellipson Ltd in Basle, will lead this work.

For further information please contact one of the following persons:

Kaspar Müller
Partner
Ellipson Ltd
Leonhardsgraben 52
CH 4051 Basle
+ 41 61 261 93 20



DAY ONE

**SESSION TWO:
ENVIRONMENTAL RISK: PART ONE: INDIRECT RISKS:**

ENVIRONMENTAL RISKS AND RELATED FINANCIAL RISKS

by Jacqueline Aloisi de Lardere
Director, UNEP Industry and Environment

Since the early 1970s, environmental issues have become increasingly prevalent. It was generally believed however, that these issues were mainly relevant to the manufacturing sector. The financial community is now beginning to realize that environmental risks are leading to financial risks. In recent years a number of commercial banks as well as banker's associations have started to take environmental issues into consideration when developing their lending policies.

In this short presentation, I would like to address three main points:

- why it is in the banks own interest to address environmental issues
- what the main environmental issues are of relevance to the banking sector
- how banks can respond to these new issues

1. THE GROWING ENVIRONMENTAL PRESSURE:

The key issue for lenders concerns the potential liabilities they face (or will face) as governments move to tighter regulations – an inescapable trend in view of the growing environmental impacts of human activities on the environment. These regulations deal with emission standards, clean up and remediation, product design and performance, and environmental liability. These regulations address not only facilities, but also the overall management of wastes produced and the environmental performance of products. The trend is to place increasing responsibility on the producer for environmental achievements along the entire life cycle of a product i.e. from production to use to disposal.

One well known example of this trend has been the

regulations concerning the clean up of contaminated sites. The US Resource Conservation and Recovery Act (RCRA) was enacted in 1976 to ensure the safe management of wastes from cradle to grave. The subsequent amendments and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) adopted in the 1980s outlined financial responsibility and provided for strict, joint and several liability. The 1992 EPA Lender Liability rule generally clarified the liability exemptions. In the European Union, a draft directive on civil liability for damage caused by waste is under discussion. This directive will cover liability for environmental damage which would be imposed regardless of fault, that is it would be strict, joint, and several. In any case, a number of European countries, such as the UK, Netherlands, Germany, and France have adopted laws and regulations concerning contaminated sites and liability. Australia and Canada have also enacted regulation in this area¹. Now, a number of governments such as Germany and France are adopting legal provisions to compel producers to take back and/or to adequately dispose of their products.

Clearly these trends in environmental legislation have an impact on lenders. Firstly, because of direct or indirect liability issues, lenders are facing new financial risks that they have to evaluate carefully. Second, there are numerous financial risks which banks could face because of environment requirements. For example, the value of property of the borrower might be reduced, the borrower might not be in a position to repay its loans due to penalties, imposed clean up or waste treatment costs, or loss of markets due to poor environmental design of products. Third, good environmental performance of a company certainly can lead to economic benefits through the efficient use of raw materials, including energy and through technological innovation which might lead to new markets. The overall positive environmental image gained with the public is also an asset for a company.

Box 1

Some principal causes of land contamination and the main contaminants

Chemical Industry and storage

A wide range of chemicals from leaking drums and chemical processes. Solvents, such as chloroform, trichloroethylene and tetrachloroethylene, are common contaminants

Coal carbonization

Hydrocarbons, especially aromatic hydrocarbons such as PAHs, from gasworks and coal processing sites

Petroleum industry

Petroleum hydrocarbons from refineries, underground storage tanks, etc.

Metaliferous mining

Acids and toxic heavy metals such as lead, copper, zinc and cadmium from mines, mine tailing and processing plants.

Timber treatment

A range of pollutants, including creosote, toxic metals such as copper, chrome and arsenic, and pesticides such as PCPs

Railway land

Pesticides, oils and coal hydrocarbons

Hazardous waste dumps

A wide variety of contaminants, especially mobile organic chemicals such as solvents

Source: UNEP Industry and Environment Review Volume 16 No. 3, 1993.

Indeed, even if it is not the role of banks to keep track of all environmental regulations, nor to acquire the full technical knowledge to monitor compliance of their borrowers with these regulations, it is certainly

in their interest to be aware of the general environmental trends and to develop a policy to deal with them in their lending procedure. The information will also be useful to stock analysts when making investment decisions.

2. MAIN ENVIRONMENTAL ISSUES LEADING TO FINANCIAL RISKS:

Site and land contamination is, as already underlined above, one of the main environmental issues leading to financial risk: remediation of contaminated land is difficult and expensive. Clean up cost estimates in the US range from US\$ 200 billion to US\$ 300 billion and more. In the UK, a 60 hectare site clean up cost nearly US\$ 45 million!

Box 1 identifies some of the principal causes of land contamination which can result from inadequate waste handling, bad storage or handling of toxics in a facility, and air pollution fall out around a facility. All these can involve borrowers liability, even if the waste handling activity was subcontracted.

Industrial accidents and accidental releases can also affect the balance sheets and profitability of companies, as demonstrated by the impact of Bhopal on Union Carbide, but there are many less well known examples.

Design or choice of products responding not only to regulatory requirements but also anticipating these requirements and taking into account public demand for cleaner products will also increasingly impact borrowers profitability.

Among the activities and industry sectors identified as having high environmental risks are asbestos, iron and steel foundries, petroleum refining, lead refining, secondary metals smelting, metal finishing, storage of chemicals, and waste management.

But there is another side to the environmental risk issue: some of the current environmental threats might affect the borrowers operations. Climate change is one of them. Further to recent escalation in losses from

Box 2

Share of total CO2 emissions in IEA member countries for selected activities

	Share of total CO2 emissions
Residential buildings	
Space heating and conditioning	11%
Water heating	4%
Refrigeration	2%
Lighting	1%
Commercial Buildings	
Space heating and conditioning	7%
Lighting	3%
Manufacturing industry	
Industrial motors	9%
Steel	5%
Chemicals	6%
Pulp and Paper	1%
Cement	1%
Transport	
Passenger cars	14%
Goods vehicles	9%

Source: Energy Efficiency and the Environment, IEA (1991) in the UNEP Industry and Environment Review Volume 17, No. 1, 1994.

windstorms and drought related wildfire in recent years, Munich Re, the largest reinsurer issued a detailed report in 1990 analyzing the threat. The basis for its concern was clear in the statistics "with economic and insured losses increasing in volume by a factor of 3 and 5 respectively since the 1960's, we definitively have a trend which, without exaggeration may be regarded as dramatic". Another example, marine pollution might be

a threat to the tourism activities, which depends upon a clean environment. Ground water pollution might threaten beverage companies who rely upon clean water for their operations.

3. POSSIBLE RESPONSES:

Facing these new types of financial risk, commercial banks will now increasingly wish to redefine the content of their lending procedure so as to integrate environmental aspects. Identifying key environmental issues relating to the different types of projects, for which a loan is sought, formulating appropriate due diligence requirements for the projects and outlining further actions required to ensure that due diligence is maintained throughout the bank's involvement in a project, will be primary concerns.

Of course, one of the first steps to be taken is an environmental screening and review of the project, to determine its potential environmental impact or on the contrary, how it might be affected by the local environmental situation.

Some of the questions which could be addressed for such a screening and review are well known by some banks. They include:

- What are the environmental issues in the industry sector?
- What are the environmental issues related to the project? What are the environmental procedures in the company? More specifically:
 - has the company adopted an environmental statement?
 - what are the environmental management tools used? In particular, for new projects has an environmental impact assessment been undertaken? For changes in existing facilities, is there a regular auditing procedure? In cases of new product manufacturing, has a life-cycle assessment been performed?
- What are the environmental records of the company?

- what are the emission levels?
- what is the past and current situation regarding compliance with regulations?
- has an environmental report been published?

Also, “environmental auditors” are slowly becoming organized as a profession, similar to financial auditors.

In the future, the ISO 14000 series of environmental management standards will certainly help banks in their environmental screening (see Box 3).

Box 3

International Standards for Environmental Management: The Work of ISO/TC 207

The International Organization for Standardization (ISO) is a non-governmental organization established in 1947 to develop world-wide standards to facilitate the international exchange of goods and services. Over 50 countries, as well as 15 liaison organizations participate in the work of ISO/TC 207-ISO Technical Committee on Environmental Management

Drafts considered by the committee to be published in coming years include:

- ISO 14000: Guide to Environmental Management Principles, Systems and Supporting Techniques
- ISO 14001: Environmental Management Systems – Specification
- ISO 14010: Guidelines for Environmental Auditing – General Principles of Environmental Auditing
- ISO 14011: Guidelines for Environmental Auditing – Audit Procedures – Part: Auditing of Environmental Management Systems
- ISO 14012: Guidelines for Environmental Auditing – Qualification Requirements for Environmental Auditors

Source: Canadian Standards Associates, Rexdale, Ontario in UNEP Industry and Environment Review, Volume 17, No. 7, 1994.

Banks can apply this environmental screening in different ways. They might decide to authorize loans to all projects for which environmental issues are causing high environmental risks. They might wish however to go one step further and give priority to “Cleaner Production” (see Box 4).

Box 4

What is Cleaner Production?

It means:

The continuous application of an integrated preventative environmental strategy to processes and products so as to reduce risk to humans and the environment.

For processes it implies:

Reducing quantity and toxicity of all emission and wastes at the source
 Conserving raw materials, water and energy
 Eliminating use of toxic raw materials

For products it implies:

Reducing the environmental impacts along the entire life cycle of products

Cleaner Production is an important step in the process to sustainable development

It lowers risks to workers, communities, consumers of products and future generations
 It lowers costs of production of goods and services, end-of-pipe treatment, health care and clean up of the environment.

4. CONCLUSION:

Agenda 21, the agenda for sustainable development adopted in 1992 at the Rio Earth Summit, specifically promotes Cleaner Production. It calls for an increased role of business and industry in implementing the principles and criteria for sustainable development. Banks also have a crucial role to play as environmental risks and related financial risks have become a business reality. But these risks can be turned into business opportunities. Bankers, both as lenders and investors, will certainly be interested in lending to or investing in long-term environmentally-sound and profitable businesses.

CLIMATE CHANGE AND FINANCIAL SERVICES

Dr Andrew Dlugolecki
Chief Manager, Operations General Accident
(UK)

Contact: *Pitheavlis, Perth, UK PH2 0NH*
Tel: (0738) 895274
Fax: (0738) 442659

Climate Change

Science

- Some gases retain heat strongly (Greenhouse Effect, CO₂ on Venus)
- Warm Air means faster, wetter storms

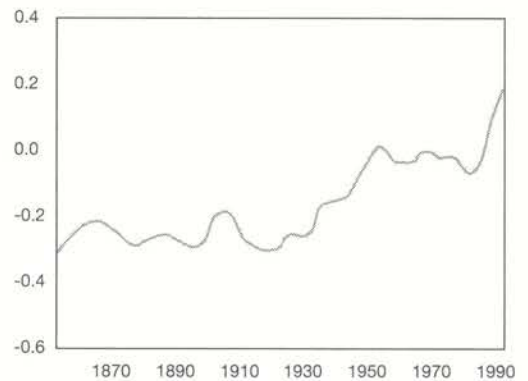
History

- Climate can change naturally
- "Small" changes matter (Ice Age "only" 5°C below today)
- Human contribution (e.g. erosion, salinization)

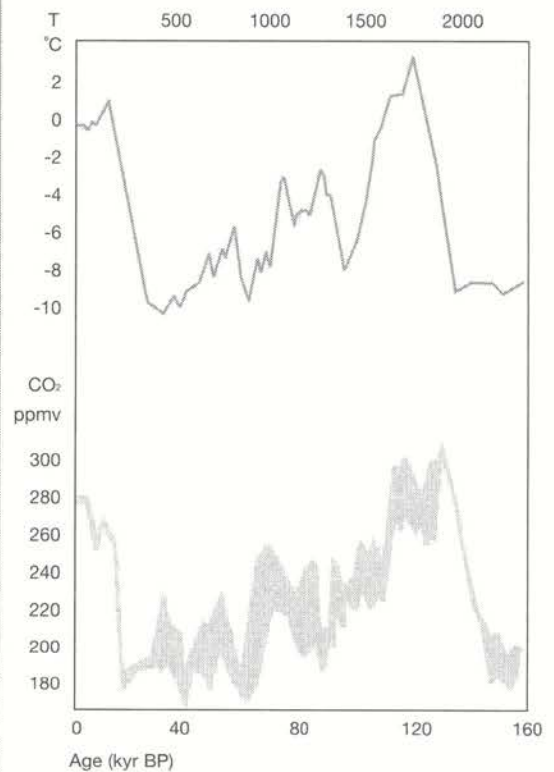
Since 1880

- Temperature + 0.6°C
- Heat-retaining gases + 25%

Global temperature 1861-1989
Relative to the average for 1951-1980



Climate and CO₂



IPPC

- Intergovernmental Panel on Climate Change
- Offshoot of UNEP and WMO (1988)
- First Assessment in 1990 (IPCC 90)
- Three Working Groups
 - WGI – scientific view
 - WGII – socioeconomic impact
 - WGIII – political implications

IPCC 90 Findings

WGI

- by 2025 “double” CO₂
- in “equilibrium” means +1.5 to +4.5°C
sea level + 65 cm
weather?
- accelerating changes

WGII

- ecosystems/water
- agriculture/energy production
- coastal zones/LDC's
- some concern from property insurers

WGIII

- limit emissions
- plan for change (e.g. CZM)
- research/educate
- assist LDC's

Global Warming in the UK

Year	2010	2030	2050
Temperature (°C)			
Summer	+0.7	+1.4	+2.1
Winter (South)	+0.9	+1.5	+2.2
Winter (North)	+1.1	+2.1	+3.5
Sea Level (cm)	+10	+20	+30
Chance of 1976 drought	60:1	10:1	3:1

Global Warming in the UK

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Sea Level (cm)	+10	+20	+30
Chance of 1976 drought	60:1	10:1	3:1

U.N. Forecasts (Year 2030)		
	Temperature (°C)	More Drought
US Prairies	+3.0	Yes
India+1.5	No	
Sahel	+1.5	?
Mediterranean	+2.0	Yes
Australia	+2.0	?

Impacts and Reaction time	
Activity	Timescale
	Day Month Year Decade Century
Water dams	
Construction specification	
Power station	
Road/vehicle design	
Credit finance	
Life policy	
General policy	
Agriculture	
Manufacturing	
Weather event	
Climate change	

Possible Impacts		
Sector	Down	Up
Agriculture	Disease/pest /weeds	CO ₂ , longer season
Biodiversity	Heat stress	CO ₂
Water	Runoff, uncertain	Average Increase
Towns	Storm, flood	
Energy	Site problems	Warm winter
Health	Disease/heat/UBV	
Transport	Inland Waterway	New Sea Channels
(Industry)	(Raw materials)	
Coastal Activities	Sea level	
Arctic	Landslip, less albedo	New land

- Extreme events and property insurance**
- Different systems of insurance
 - Storm cover is widely available
 - Storm claims have escalated
 - Critical level already reached in some areas
 - Paralleled by flood, drought, etc.
 - \$50 bn event in USA would be critical and is already possible

IPCC 95

- Same three working groups
- Update scientific view (e.g. SO₂ haze)
- Admit disagreement
- More detail on impacts (WGII) and policy (WGIII)
- A full chapter on Financial Services (IIB9)
 - convening author: Andrew Dlugolecki (UK)
 - + 2 insurers (Tanzania, Jamaica)
 - + 1 modeller (USA)
 - + 1 climate expert (UK)
 - + 1 banker (Switzerland)
- Needed – wider participation

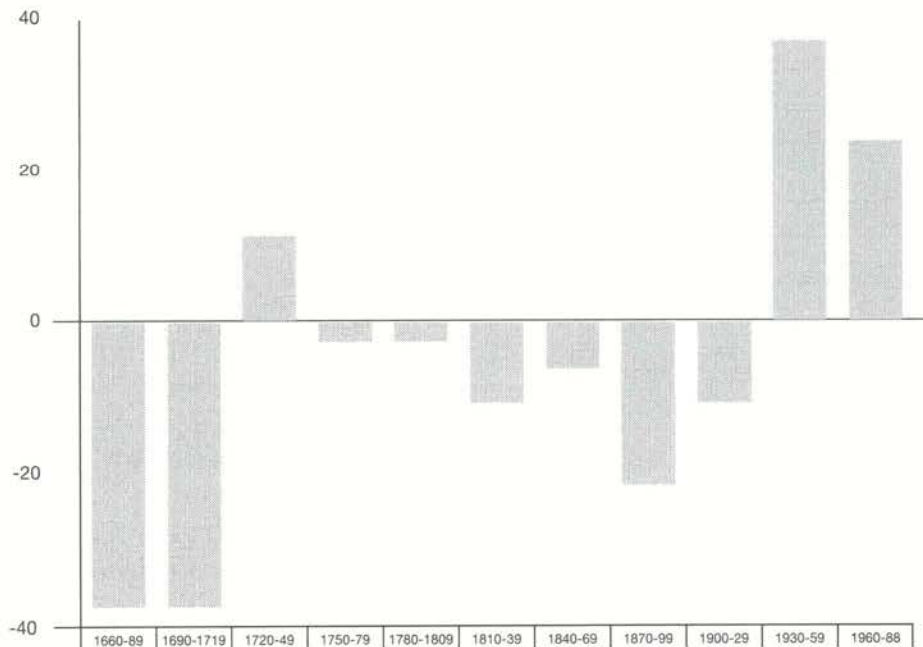
Annual rate of extreme months in UK

	Hot	Cold	Wet	Dry
1960's	1.0	0.5	1.4	0.8
1970's	1.7	0.7	1.0	1.2
1980's	1.8	0.8	1.2	0.9
1990's	4.0	0.7	0.7	1.3

(expected annual rate = 1.2)

Difference between
Hot and Cold
Months

Hot or Cold?



Winter storms and temperature 1690-1989

Type of Winter month	Storm Frequency	Storm Strength
Warm	15%	2,568
Medium	7%	2,544
Cool	6%	1,075

Temperatures from Manley series
Storms data from Lamb

Direct effect on property

More – subsidence?

– floods?

– storms?

– heath fires?

Less – freeze?

Coastal Problems!

How Cold Was It?

Year	Month	Rank (1659-1991)
1963	J	5
1963	F	7
1979	J	16
1981	D	7
1982	J	a.r.
1985	J	a.r.
1986*	F	5
1987	J	a.r.
1991	F	a.r.

*N not reported by ABI

a.r. = also ran (not in worst 30)

Insurance and Global Warming

- Information gap – which hazards
 - where?
 - how much? how often?
- Quick reaction – contracts last 12 months time
 - only partly natural hazard
- Options – pricing, cover, claim control, transfer
- Long-term assets – need insurance support
“handmaid of commerce”
- Miscellaneous – non-property classes
– own investments

Future Storm Tracks

	Now	Simple Model	Coupled Model
NS (°C)	–	+	–
Az (°C)	+	++	++
Br Isles (storms)	→	→	➔

Initial Market Reaction

➤ Limit the Risk

- deductibles/selective underwriting
(**BUT** governments favour wide coverage)
- risk management

➤ Control the Damage

- 24 hour helplines
- approved repairers

➤ Transfer the Risk

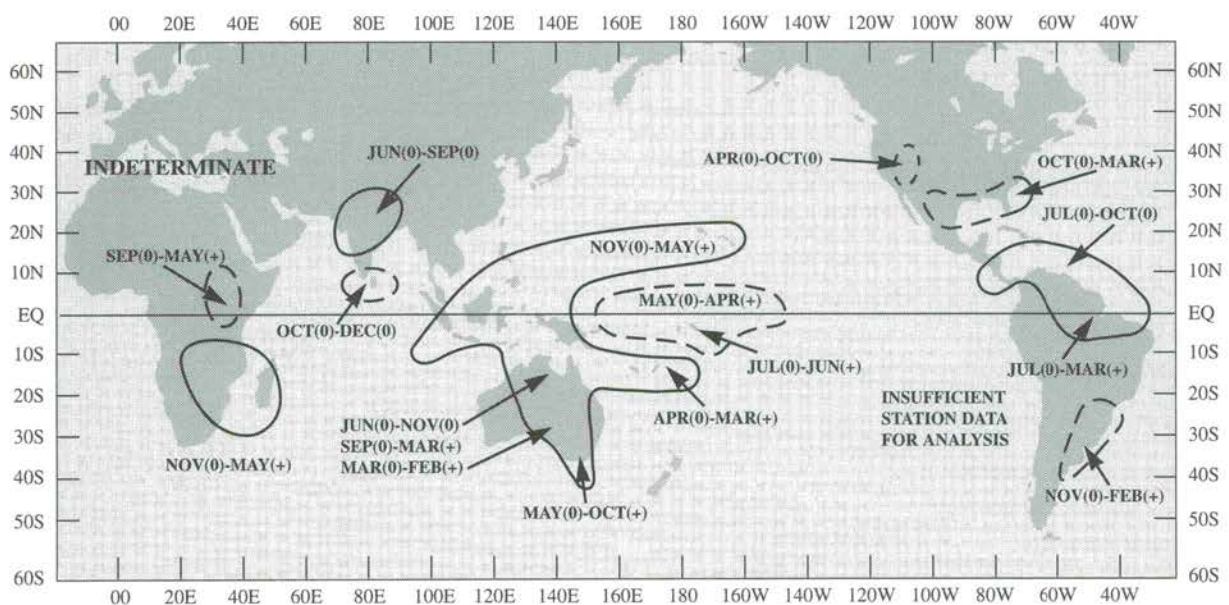
- reinsurers are losing money too
- liability? blame someone else and recover uninsured losses

➤ Price the Product

- reluctance to lose market share
- "it won't happen again"!

Indirect impact on insurance industry (1)

- Further classes of business will be affected (Liability, Business Interruption, Personal Accident)
- Costs will be exacerbated by market trends
 - Wider Products
 - Exaggerated Claims
 - Rising Exposure
- Claim handling will become more efficient
 - Major improvements were made following the October 1987 storm.
- Governments will try to use insurance market to handle financial impact e.g.
 - flood insurance in UK
 - natural catastrophe cover in France



Indirect impact on insurance industry (2)

- > Insurance industry will become more involved in risk management
 - Construction standards
 - Sea protection
 - Tree management
- > Events overseas could be critical for international insurers
- > Fiscal changes will be necessary to smooth out claims volatility

Wider Implications

- > Changes in consumer demand
- > Energy policy
- > 'Green' issues e.g. CFC's
- > Health
- > Conflict over resources
- > Demand for capital
- > New frontiers

Green policies for insurers

- > **Motor Rating**
 - we already do **green**
- > **Paper**
 - our major by-product!
- > **Investment**
 - forests in!
 - oil out!
- > **Lobby**
 - the others do1

Conclusions

- Weather patterns are changing
- Small climate changes have big effects
- These changes are compounded by market changes

Predictions

- Climate change will speed up
- Major consequences for insurers
- Long-term international effects

LIABILITY FOR NUCLEAR DAMAGE

Liability for Nuclear Investments in central & eastern Europe and the former Soviet Union and Implications for Asia

Simon Carroll
Greenpeace International

1. SUMMARY AND INTRODUCTION

There is currently a unique opportunity for radical energy sector reform in central and eastern Europe (CEE) and in the countries of the Commonwealth of Independent States (CIS). This reform would realise major environmental protection objectives by enabling the phase-out of Soviet-designed nuclear reactors and highly-polluting coal-fired power plants. This energy sector reform would also create the basis for long-term and far-reaching strengthening of these countries' economies.

This opportunity is being lost at present, in part because western political and financial institutions are focusing their energy sector assistance and lending to the region in support of the short-term interests of its nuclear industries.

The focus on lending and assistance for nuclear projects in the CEE/CIS is absorbing a disproportionate amount of western energy sector financing in the region. Yet implementation of nuclear projects in the CEE/CIS is being significantly delayed because of concerns over potential extensive liability exposure in the event of a major accident. Contractor, supplier, and lender liability problems are likely to persist.

Similar liability exposure also exists for western contractors, suppliers, and lenders involved in nuclear projects in the Asian region:

This paper therefore considers:

- Costs of serious nuclear accidents and developments in the area of liability for nuclear damage, particularly as they relate to central and

eastern Europe and the former Soviet Union;

- The effects on nuclear investments in eastern and central Europe and the implications for Asia; and
- Recommendations for lending for energy projects in light of the above.

2. COSTS OF NUCLEAR ACCIDENTS AND LIABILITY FOR NUCLEAR DAMAGE

The Chernobyl disaster in 1986 brought to the attention of the public throughout the world the dangerous state of nuclear installations in the USSR and other countries in central and eastern Europe. Chernobyl also made it clear that a major nuclear accident would not only be likely to have grave consequences in the area immediately surrounding the reactor, but that significant transboundary damage could also occur over considerable distances.

2.1 Costs of Nuclear Accidents

The funds required for full compensation of damage caused by an accident on the scale of Chernobyl are considerable. A review of detailed studies of the costs of major nuclear accidents, primarily from official sources, showed that the economic costs of such accidents may be as high as hundreds, possibly thousands, of billions of dollars.¹ It should be noted that all the studies reviewed variously limited the scale of accidents considered and the scope of damage included in the estimates.

A number of studies have attempted to assess the local and transboundary costs associated with the Chernobyl accident, but its actual costs may never be fully known, due to uncertainties in the data, difficulties in calculating hard currency equivalents for currencies of economies in transition, and because compensation is still being paid both within and outside the CIS. Short-term losses for Chernobyl have been placed at around US\$ 20 billion, with long-term losses estimates of US\$ 150 billion and higher.²

The table below shows compensation provided in

certain western European countries following Chernobyl for the year immediately after the accident. This reflects the costs of measures ordered by national governments to protect the public, and in some cases livestock, from eating contaminated food.³

liability claims. The Conventions provide for strict liability for nuclear damage, legal channelling of liability exclusively to the operator, limitation of the operator's liability, and compulsory insurance or other financial security.

Chernobyl-Related Compensation in Some Western European Countries (as of mid-1987)

COUNTRY	TYPE OF ACTION	AMOUNT	APPROX. U.S.\$
Austria	Federal Disaster Fund	Sch 1.5 billion	\$97 million
Germany (West)	Atomic Energy Act	DM 500 million	\$227 million
Italy	Act of 1.8.86	Lir 500 billion	\$330 million
Netherlands	Min. of Agriculture Decision, 7.5.86	Hfl 770 million	\$480 million
Norway	Government decision of 31.7.86	NKr 165 million	\$24 million
Sweden	Special budget allocation	SKr 250 million	\$35 million
United Kingdom	Civil Contingency Fund	UK# 4.3 million	\$6.6 million
TOTAL			\$1200 million

It should be noted that the possibility of such major accidents occurring is not restricted to Soviet-designed reactors in the CEE/CIS. A recent survey of the world's 416 commercial power reactors between 1988 and 1993, identified 1500 "safety significant" events, some of which could have given rise to major accidents on a Chernobyl scale and which were mainly related to equipment failures.⁴

2.2 Liability for Nuclear Damage

Chernobyl also highlighted flaws in the international nuclear liability regime established by the Paris and Vienna Conventions.⁵ Both Conventions were established in recognition of the unique hazards posed by nuclear power and with a view to protecting a nascent nuclear industry from potentially unlimited

Chernobyl made it apparent that the Conventions applied to too few countries to be effective, but also that the liability limits established under the Convention were too low and that victims were inadequately protected.⁶ It is generally acknowledged that flaws in both Conventions include that:

- neither are favourable to victims, in particular by limiting access to courts and by limiting the type of damage that may be eligible for compensation;
- neither convention requires compensation for environmental damage; and
- liability may be limited to far less than that required for full compensation of damage arising from serious accidents.

Partly as a result of these flaws, few countries are Parties to either of the Conventions. As the Soviet Union was not Party to either Convention at the time of the Chernobyl accident, and because of difficulties perceived in bringing claims in the Soviet Union, no country sought compensation from the USSR.

2.3 Potential Liability for Nuclear Investments in the CEE/CIS

Since Chernobyl, the situation has changed in that:

- refurbishment of Soviet-designed and built nuclear reactors and completion of units, whose construction was frozen following Chernobyl, by western vendors and contractors has become a priority issue; and
- these priorities have been supported by newly-extended western energy grant and loan provisions to the nuclear sector to the relative exclusion of other energy sectors.

One of the key motivations in prioritising western lending and assistance for nuclear projects in the CEE/CIS is to support and maintain western nuclear industries which continue to be severely affected by the down-turn in new reactor orders. For example:

The need to help the countries of Eastern Europe to improve their nuclear safety and technological potential is an opportunity for European industry to maintain its own technical and industrial potential, which it must do to keep the nuclear option open⁷

However delays in these nuclear projects have been caused by concerns of western nuclear vendors and contractors over potentially unlimited liability exposure in the event of a serious nuclear accident, particularly where lawsuits could be brought in the west. Lender liability exposure is also a possibility, but has been less well recognised. The liability exposure arises because few of the countries in the CIS/CEE have become Party to either the Vienna or Paris Conventions and in many cases do not have national legislation concerning liability for nuclear damage. For this reason, the various provisions of the

Conventions which reduce potential liability exposure (and which are also features of the national law of western countries with nuclear power) do not apply.

The most important provisions of the Conventions from the perspective of suppliers, contractors, and lenders concern the channelling of liability. The channelling provisions of the Conventions provide that the operator of a nuclear installation is exclusively liable for accidents at and in relation to a nuclear installation. Accordingly, outside the framework of the Conventions, if an accident causing nuclear damage were to occur during or after work on an installation by a western company or companies, victims might choose to sue the western firm(s) either singly or jointly with the operator. The claim may be brought because the victims considered that the goods or services provided or funded caused, aggravated, or failed to prevent the accident. Potential exposure of lenders, including institutions such as the Commission of the European Communities, arises also in part because of their involvement in conducting and evaluating safety assessments and performing or evaluating non-nuclear alternatives. As noted by the OECD/NEA Secretariat:

Indeed, in a legal system in which liability is not imposed exclusively on the operator, and given the complexity of the technical questions involved in determining the causes of a nuclear accident, it would be prudent for plaintiffs to bring compensation claims against as many defendants as possible.⁸

The OECD/NEA have also identified other considerations which may affect a decision in bringing claims against contractors, suppliers, and lenders. These include:

- A Western company or institution might be brought more easily before the court chosen by the victim than one chosen by the operator. The choice of court could be determined by factors such as the level of damages customarily awarded, the range of damage compensable, as well as the law applied;

- Questions of immunity from prosecution since, in the CEE/CIS, the nuclear reactors are usually operated by the State;
- The disposable asset of the western companies or institutions might, in some cases, be greater, or at least more easily convertible, than those of the host State;
- Unfamiliarity with local laws and procedures in the CEE/CIS and ambiguities in national legislation, where these exist.

It should be noted that the degree to which a contractor, supplier, or lender is exposed does not depend on the degree of involvement in a project. Accordingly even a very small involvement could give rise to potentially unlimited liability claims. Even if litigation were unsuccessful, legal costs and loss of reputation alone could be severely damaging to a company.

For suppliers, lenders, and contractors to avoid liability it is not sufficient that a country where nuclear investment is occurring and the country (-ies) of the suppliers, contractors, and lenders be Party to the Paris and Vienna Conventions, but that:

- all neighbouring countries in which nuclear damage might be suffered should also be Parties; and
- all countries involved must have appropriate national implementing legislation.

For these reasons, attempts to use bilateral agreements or indemnities will be insufficient to prevent potential liability exposure.

3. CONSEQUENCES OF LIABILITY EXPOSURE FOR NUCLEAR PROJECTS

3.1 The CEE/CIS

The concerns caused by potential liability, exposure has been and continues to be a central reason for the delays in implementing nuclear projects in the CEE/CIS. Given the need to involve all host and contributing States, as well as all neighbouring countries in which

nuclear damage might be suffered in the event of an accident, in order to reduce liability exposure of suppliers, contractors, and lenders, it is clear that the liability question will not be speedily resolved.

Discussions are underway at the International Atomic Energy Agency in an effort to gain consensus on revising and supplementing the Vienna Convention, with a view to obtaining much broader adherence. However, even if the CEE/CIS countries with nuclear programmes eventually join the Vienna Convention, non-nuclear countries may perceive that their interests will be better served by staying outside of the Vienna Convention framework. The liability concerns of western suppliers, contractors, and lenders would thus remain. It is clear from the negotiations to date that simultaneously meeting the concerns of States without nuclear power and the CE/CIS countries will be difficult and may be impossible to achieve.

Even if problems relating to liability were resolved, the western focus on nuclear projects in the CEE/CIS would still remain problematic. Reasons for this include:

- It is unclear whether western assistance has, or can, make significant improvements to Soviet-designed reactors, and whether the assistance could merely serve to prolong the risk of a second Chernobyl by prolonging the operation of the highest risk reactors⁹;
- Assistance is being given without commitments that reactors will be shut down over a particular time-frame, if at all. Even where replacement power becomes available, some recipient nations will continue to operate the highest risk reactors to provide surplus energy for export¹⁰;
- Industries throughout the CEE/CIS will have to become much more efficient if they are to compete internationally and allow these States to reduce expenditure on energy imports. While the emphasis on nuclear lending remains, financing for energy efficiency projects remains limited.¹¹

Even if liability concerns are addressed, investment

in the nuclear sector can be seen to be at considerable risk to companies involved. Other factors increasing the investment risk for nuclear projects in the CEE/CIS include:

- poor feedback of experience;
- lack of design standardisation and incomplete or unavailable reactor design details;
- unstable and incomplete legislative, regulatory, and political framework; and
- constructions which are ad hoc hybrids of western and Soviet design and construction.

The consequences of the western emphasis on nuclear projects can be seen to be that:

- existing reactors continue in operation with minimal improvements in technology and equipment; and
- opportunities are being lost for restructuring the energy sector and providing the basis for long-term development of national economies in the CEE/CIS.

3.2 Implications for Asia

While the discussion of nuclear liability has centred on the CEE/CIS situation, it also has implications for the Asian region. The situation in Asia is significant in that:

- some see Asia as the future growth region for energy supply investment, including nuclear power;
- only one country in Asia has joined either the Paris or Vienna Convention (the Philippines); and
- major western nuclear investment has started to flow to countries in the region which are outside the international liability regime (e.g. China).

The lack of understanding of potential liability exposure for western firms involved in the Asian

region was highlighted recently by the Daya Bay reactor in China in which Framatome and GEC were involved, supported by consortia of French and United Kingdom banks.¹² On being asked about possible liability exposure of Framatome for this project, a spokesperson is reported to have stated that liability was not a concern (although China is not a Party to either the Paris or Vienna Conventions), because the risk of a Chinese citizen suing Framatome outside of China was considered low, and because China was considered capable of shouldering the financial responsibility of third-party liability claims.¹³

Clearly, liability concerns could come to play as important a role in nuclear investment in this region as they have in the CEE/CIS over the last few years.

4. RECOMMENDATIONS FOR ENERGY LENDING AND INVESTMENT

The investment funds that are currently reserved for delayed nuclear projects can address environmental problems, energy demand, and be usefully invested if another approach to lending and investment in the energy sector is taken.

In the CEE/CIS, this approach should focus initially on improving energy efficiency as its top priority. In this region, the present electricity consumption per unit of economic output is typically twice as high as in OECD Europe. Moreover, since electricity use in the region has not decreased by as much as economic output, electricity intensity has actually increased in recent years. However, as economies revive, energy consumption will rise again to 1990 levels by around the year 2000 unless structural reform of the energy sector has taken place in the meantime¹⁴.

A limited window of opportunity exists in the CIS/CEE to address simultaneously:

- environmental concerns (both from fossil fuels and nuclear power);
- electricity sector reform and development; and
- strengthening economic development.

Investment in energy efficiency here will not only provide these direct short-and long-term benefits, but will also avoid the liabilities and chokes on investment which are inherent to the nuclear sector as identified earlier.

In the Asia region, with its rapidly growing economies and escalating energy demand, similar opportunities exist for investment in energy efficiency and renewable energy investments in the short term, and with similar reductions in liability exposure in comparison with nuclear projects.

Case Study – Nuclear Lending to China

After seven years of negotiations between China, France, and the United Kingdom, an agreement was reached for the financing of the Daya Bay nuclear power project (jointly owned by China and Hong Kong). Of the US\$ 4000 million budget, US\$ 400 million was in equity, and the balance was financed by export credits and commercial loans through the Bank of China. The Guangdong Nuclear Investment Company (GNIC) held 75% and the Hong Kong Nuclear Investment Company (HKNIC) held 25% of the equity.

China utilised PWR technology and imported reactors from the French firm Framatome. The conventional part of the project, such as turbine generators, was supplied by GEC (UK). Electricite de France (EdF) was given the responsibility for all technical matters, including plant design, construction, and commissioning. The reactors began operation in 1994.

For the export of turbine generators from GEC, the UK ECGD provided export credit, with the Midland Bank acting as agent. For the exports of reactors from Framatome, export credit was facilitated by BFCE, with export insurance being provided by COFACE. A UK syndicate was led by Midland Bank, and a French one by Banque National de Paris.

In the UK, ten banks participated in the consortium for a total of UK£ 420 million, guaranteed by UK ECGD:

– **Managing banks:** Midland Bank, Barclays Bank, Lloyds Merchant Bank, National Westminster Bank, J. Henry Schroder Wagg, Morgan Grenfell

– **Participating banks:** Bank of Scotland, Kleinwort Benson, Standard Chartered Merchant Bank, Royal Bank of Scotland.

In France, seven banks syndicated a loan totalling F.Fr 13 000 million (approx: US\$ 2000 million at the time) backed by BFCE.

– **Participating banks:** Banque Nationale de Paris (BNP), Credit Lyonnais, Societe Generale, Banque Paribas, Banque de l'Union Europeenne, BFCE, Banque Indosuez.

1 Review of Estimates of the Costs of Major Nuclear Accidents, Greenpeace International, Prepared for the 9th Session of the Standing Committee on Nuclear Liability of the International Atomic Energy Agency, February 1994.

2 See, for example, Outlook on International Nuclear Liability, Nucleonics Week Special Report, 29 September 1994.

3 Outlook on International Nuclear Liability, as above.

4 Handbook of Reactor Accidents: 1999-1993, Antonia Wensch, Okologie-Institut, Vienna, September 1994. The incidents were selected on the basis of: impact or potential impact to the environment, public or injuries to workers; precursors to severe accidents; damage of important plant components or systems; evaluation by national authorities.

5 The 1960 Paris Convention on Third Party Liability in the Field of Nuclear Energy established under the auspices of the OECD/NEA, and the 1963 Vienna Convention on Civil Liability for Nuclear Damage established under the auspices of the International Atomic Energy Agency. Additional funding for compensation of nuclear damage for States Party to the Paris Convention is made available through the 1963 Brussels Supplementary Convention. The Paris and Vienna Conventions are linked by the 1988 Joint Protocol relating to the Application of the Vienna Convention and the Paris Convention.

6 See, for example, Chernobyl: Law and Communication, Philippe Sands, Grotius Publications Limited, Cambridge, 1988.

7 Towards a Coherent Industrial Policy for the European Community in the Field of Nuclear Energy, Marc Defrennes, DG-XVII, Commission of the European Communities, Energy in Europe, July 1993.

8 Potential Liability of Contractors Working on Nuclear Safety Improvement Projects in Central and Eastern Europe, Nuclear Law Bulletin No. 53, OECD/NEA, June 1994.

9 See, for example, Nuclear Safety: International Assistance Efforts to Make Soviet-Designed Reactors Safer, U.S. General Accounting Office, October 1994.

10 Nuclear Safety: International Assistance Efforts to Make Soviet-Designed Reactors Safer, U.S. General Accounting Office, October 1994.

11 See, for example, Energy Operations Policy, EBRD, March 1992.

12 For details, see the case study, annexed to this paper.

13 Nucleonics Week, 7 July 1994.

14 Electricity in European Economies in Transition, International Energy Agency, Paris, August 1994.

DAY ONE

**SESSION THREE:
DEVELOPING AN ENVIRONMENTAL POLICY**

Hilary J. Thompson
Head of Environmental Management Unit
National Westminster Bank

The NatWest Group believes that there is a clear connection between the effectiveness of a business' environmental risk management programme and its prospects for financial success.

Of almost as much importance as the programme itself, is the willingness to make it transparent, by public reporting to all stakeholders – to shareholders, employees, investors, customers, suppliers and members of the public at large.

As part of our environment policy it is our intention to make our own environmental performance transparent and to encourage others to do so too. The NatWest Group has made good progress in respect of its environmental responsibility programme over the past year.

We have agreed and codified an environmental management system (EMS) which ensures delivery of our policy objectives and targets in terms of risk management, effective control of the environmental impact of our own operations and in respect of business opportunities. The EMS is designed to ensure on-going improvement in terms of our environmental performance as we move further towards our goal of environmental best practice, wherever this is practicable.

We have made a significant commitment to our environmental programme in terms of resource, time and effort. Across the NatWest Group there are nine full-time staff engaged in environmental issues and, of course, numerous others who devote part of their time to environmental matters. A significant amount of executive time is also spent on the environmental responsibility programme, using existing management systems wherever possible.

The provision of finance to customers is obviously a

core activity for any bank and the integration of environmental issues into our risk management procedures has been, and will continue to be, a key aspect of our environment programme.

NatWest believes that banks have a role to play in helping to raise environmental standards through encouragement and prudent lending. This is outlined in our own policy statement and in our signature to the Statement by Banks on Environment and Sustainable Development.

However, we strongly believe that it is not, nor should it be, the responsibility of lenders to 'police', or try to manage, their customers' businesses. Whilst banks are the providers of finance to business, they are not responsible for, and do not control, the investment decisions made by a business customer. A lender's decision to provide funds is based upon a risk assessment of the ability of a business to repay any such borrowing and environmental risks are an important part of that assessment for NatWest.

When a bank lends money it gains no more 'control' over the direction of the business than petrol retailers gain over the direction of a car to which they have contributed fuel. Funds are rather like fuel for the business. It is up to the customer to ensure that the funds are deployed responsibly. This is why the NatWest Group is encouraging customers to put in place their own environmental risk management systems aimed at raising standards and performance over time.

The NatWest Group endorses the 'polluter pays' principle and believes that in order to achieve environmental improvement and economic growth, all sectors of the economy should develop and apply 'codes of practice' designed to raise environmental standards overall. These codes will vary in accordance with the different aspects of business but should complement each other and bring about the improvement sought. A pragmatic approach is required which recognises that money is also a limited resource.

An important part of our environmental

responsibility programme relates to the management of business opportunities and threats posed to the Group and its customers, both directly and indirectly, by environmental issues. We recognise that for many of our customers, particularly small and medium sized enterprises, the complexity and pace of change relating to the environment can be daunting.

NatWest will continue to provide relevant information to its customers, in a format designed to assist them in managing their own risks. Examples of existing products and services include PHAROS: Business Adviser, a computer based information system which builds up a profile of the individual business, identifies the key environmental issues relevant to that business and provides a personalised, action oriented information base, and the Small Business Information Directory, which provides start-up businesses with information on, for example, grants, jobs and training, energy conservation and environmental protection.

Other products and services offering business and environmental advantages include MONDEX, a payment scheme offering an alternative to cash, and PACE – Paying Abroad Cost Effectively – both of which allow for more rapid transaction of funds and reduced use of resources.

In order to ensure that NatWest itself is aware of the key issues impacting on business, the Group participates, at executive level, in a number of local, national and international environmental initiatives. These include Lord Alexander's membership of the UK Government Panel on Sustainable Development, my own chairmanship of the UK Government's Advisory Committee on Business and the Environment (ACBE) and membership of ACBE's Financial Sector Working Group, Business in the Environment (BiE), the European Commission's Consultative Forum on the Environment and the World Industry Council for the Environment (WICE).

In addition, NatWest is actively involved with such issues as contaminated land and liability, both of which could, if handled incorrectly, have an adverse

impact upon UK competitiveness and the small and medium sized business markets in particular.

In summary, NatWest believes that environmental sense and business sense are closely linked and that the integration of environmental issues into core business activities should be a key aspect of business management.

DEVELOPING THE ENVIRONMENTAL POLICY OF SWISS BANK CORPORATION

by **Franz Knecht**,
Head Environmental Management Services,
SBC Basel

With our Head Office in the German-speaking part of Switzerland, we are naturally subject to the many sensibilities of the Swiss. These include many earnest ideas on the correct way to make 'fondue', for example (depending on which Canton one lives in), and extend to the proper way to run the world - and Switzerland's place within it (or outside of it!). Living in a pluralistic democracy where every issue is put before "the people" for referenda, we are accustomed to being scrutinized and criticized. The decision to articulate an environmental strategy took place not in isolation, but against such a background.

WHY an environmental policy - and why NOW?

As with all major decisions, there is a history behind ours. Environmentalism, the issue in the spotlight, was increasingly (although rather vaguely) being put forward by the public - including our own staff. Such awareness is a necessary precondition to action.

And, in addition to the Brundtland report, there was already action - in Switzerland and elsewhere:

- some banks had launched green funds
- account statements were issued on recycled paper
- principles of construction for new projects and renovations (standards) were formulated
- working groups were being formed
- reduced-interest eco-loans were available from certain institutions
- environmental staff positions were being created
- debt for nature swaps had taken place
- eco-databases were online

- central procurement efforts were underway
- some people were providing their information on chlorine-free paper
- and last our own management was made aware of these issues by The Business Council for Sustainable Development (BCSD), which "elevated" environmental questions to the CEO Level.

I used the word "environmentalism": What can this mean for a bank? I use the word environmentalism" because it became clear to us that forming a concept and implementing a strategy was different from facing individual environmental issues on an ad hoc, case by case basis. We felt this was a clear case of "thinking globally" before acting locally: environmentally - and with the bank's overall strategic interests in mind.

When SBC's working group first sat down to consider what all this meant to our company, they agreed that environmentalism was coming to play an increasing role in politics, society and the economy - and so, of course, in banks.

Who began the process?

This working group consisted of SBC specialists from all sectors: front and back office staff members, research, communication experts, etc. Not all of them were environmentalists by training or inclination although, of course, some members of the group were known as fundamentalists and others regarded as very sceptical of this sort of development in our bank. From the outset, SBC wished to include a spectrum of many viewpoints.

The process was led by an external expert from the university of St.Gallen and enriched in particular points by outside environmental specialists.

(At this point, let me just say that this was important because - as everyone knows - a prophet is without honor in his or her own country - or own company. But this has changed in the last two years: Bankers now do listen - but they require proof.)

From the outset we saw the need to consider these aspects

- environmentally-related credit risks
- environmentally aware investing
- a bank's image - important today in recruiting conscientious young staff and important to motivating staff
- the social responsibility of a bank
- environmentally sound management as indicative of economically sound management.

No doubt you will agree that this last point is the most vital of all.

Coming to grips with the issue meant appointing the working group to formulate a comprehensive concept based on broad, well-founded statements. These statements, which form our Environmental Mission Statement, represent the distilled results of task forces forming the working group. Environmentalism in no way means deviation from profit goals. Far more it means an active securing of probable future needs - taking account of market opportunities and cost advantages.

What emerged as the potential major risks and benefits of a environmental policy?

We envisioned the following potential benefits

- financial savings and efficiency: By reducing energy and materials costs and managing waste, money could be saved and efficiency improved
- reducing risks (liability)
- reducing the likelihood of political restrictions
- attracting new customers who themselves value environmental responsibility as a sign of good management

But we also saw risks and challenges:

- where do we find what we need to know?
- will we be credible with customers - many of whom are sceptical about business acting ethically?
- how will we change staff behavior?
- will these be merely empty words?

And specifically we saw potential business risks:

- is there a reasonable market for green-oriented services and products?
- what about the costs of such a strategy?
- will there be a negative fallout on business results?

We did market research here in Switzerland and found that our feeling was correct the time was now and we decided that we should incorporate the environment into our business. Most people thought banks should do more for the environment, we discovered, and many people felt that such efforts would reflect positively on the banking image and credibility. But a few felt it would be merely cosmetic.

Based on risk/benefit considerations, and guided by the environmental mission statement we developed four key areas:

Corporate ecology

To begin, we needed an action-oriented environmental audit. What we meant by this was a means to see clearly our status quo so as to

- clarify the environmental effects of corporate behavior
- understand the key sources of pollution in the business which can be changed

- evaluate action and decision choices and derive appropriate measures
- implement a corporate environmental policy review system.

You will find the detailed results of this first and perhaps most important step in getting closer to the complexity of the subject in our recently published environmental report.

Human resources and training

- To sensitize and to motivate means above all to communicate. This means providing information to our staff.

Staff training must be based on sound information and a clear understanding of what is meant by a more environmental approach relative to the different operating divisions of a bank: retail, credit and investments.

Product ecology

We see the demand for environmentally-conscious banking services growing in two directions:

- a) Enhancing existing and new business relations with an environmental view. This means first of all consideration of our borrowers environmental risks.

The most important objective of here is to integrate environmental aspects in our customer rating system, and finally, to price services based on environmental aspects.

- b) Meeting the needs of our customers by offering new services: e.g. advisory, etc.

What we don't want to do is to offer reduced credit rates merely because the borrower will be using the funds for "green" purposes. We are not, after all, in the business of subsidies.

Information and communication

It is not our intention to use our environmental behavior primarily as a marketing instrument. Thus, we do not plan to start with environmental sponsoring or even to disseminate our environmental policy before serious results are in.

It is of great importance to inform and communicate pure results and clear objectives, which is what we tried to do in our environmental report. As well, we want to keep ourselves informed and at the cutting edge. And this entails our cooperation with colleagues in the business world. We have been involved in WICE since 1993 and are founding members of the Swiss Bankers Association task force "Banking and the environment" (Banken und Umwelt).

It has been some four years since we took on this job and over three since the concept was approved by our then Executive Board. From our first notions of recycling and catalytic converters, from sensible heating and lighting policies, our purpose has broadened to include photovoltaic arrays, large shredding operations, and staff sensitization projects.

Environmentalism can now be thought of as a strategic option. We have begun a process from which no company can now opt out. There are before us the benefits in having this process flow from tried and true entrepreneurial mechanisms. And there is great satisfaction in having the unknown of yesterday become the normal of today.

And as signatories to UNEP we do subscribe to the belief that sound environmental practice is a key factor in demonstrating effective corporate management.

Conclusion

Should you ask me to define our experiences with one picture I would show you the following one: from awareness to action. What does that mean?

Awareness means knowing what you are seeing:

banking is part of the economic system and is confronted with environmental questions in the same way as the rest of the business world;

Acceptance means believing what you are seeing: every bank staff member confronts environmental questions, the use of resources or direct risks to our business;

Action means doing something to influence the situation: everyone has a role to play, whether that be passive or active.

Swiss Bank Corporation has done a lot - but many things remain to be tackled.

An environmental Mission statement for Swiss Bank Corporation

1. Swiss Bank Corporation acknowledges that it shares a special responsibility to organize and win its business' in a manner which does not impose a burden on the ecology, so as to assure the long-term preservation of the natural foundations of life.

2. For us, environmental responsibility represents an integral component of our overall corporate accountability, together - with our economic and social commitments.

3. Our ecological commitment embraces the economical use of scarce or environmentally suspect products and materials in our own operations (corporate ecology), as well as the reappraisal and possible adjustment of our product range (product ecology).

4. Ecological responsibility at Swiss Bank Corporation starts at the top management level, where a recognition of the validity of environmental goals constitutes the basis for all our efforts. This commitment does not stop with top management, however, but must be promulgated at all levels of the hierarchy and exercised by each employee in his or her area of responsibility. Putting this into practice must be a continuous process.

5. We view open communications on environmental questions as a corporate duty. We work with the authorities and - other institutions to maintain an open dialogue, and also make information concerning the environment available to the media.

6. We realize that corporate environmental consciousness implies both opportunities and risks. But we are convinced that our ecological behavior is an important investment in Swiss Bank Corporation's future. Our goal is to be counted among the most progressive business enterprises in terms of ecological awareness as well.

**Notes from Peter Blackman, Assistant Director
British Bankers' Association**

The position of the UK banking industry on environmental issues, particularly concentrated on liability. This focus is reflected in the BBA Position Statement, *Issues Brief and Response* to recent UK Government consultation paper "Paying for our Past". What they say is clear and is summarised in UNEP Discussion Paper so briefly I will explain the process and key some points.

Environmental issues were first considered by BBA in 1989, when we became aware of work on EC draft directive on damage caused by waste. The European element is left largely to Phillippe van Blerk to cover in his subsequent presentation so I do not wish to cover the same ground. But part of our work as a national association has been to stimulate interest within the European Banking Federation (EBF) in environmental issues.

The BBA is looking at national (and regional), European/Continental and worldwide environmental concerns. This includes the work of UNEP and the Inter-Governmental Panel on Climate Change.

The BBA has lobbied in Europe against lender liability and secured lender liability as propounded by, or implied in, the EC draft Directive. EC draft Directive is now shelved, and the EC Green Paper has taken over. The BBA is taking an important role with EBF. Part of EBF delegation to joint EU Parliament/Commission Hearing about Green Paper. In the proposed Directive is the Anglo Saxon problem of ownership when realising security where this can be effected through the Courts on Continental Europe. The Council of Europe Convention encourages use of the concept of "exercise of effective control" to be linked to liability, which fits a UK approach and law.

UK development of thinking on contaminated land and liabilities: BBA has played prominent role in consultations. Contaminated use of land register not to be developed. UK legislation on contaminated

land and liabilities likely to be brought forward during next twelve to eighteen months following recent consultation exercise (Paying for our Past).

Initially, BBA executives handled environmental issues. Subject of interest to BBA Risk Management Committee. Eventually, an important subject in its own right. Therefore BBA formed Environmental Issues Advisory Group (EIAG) at end of 1992. Stephen Funnell, Royal Bank of Scotland, Charles Crowe, HSBC, Mike Pummell, Barclays, and PB Members of EIAG attending this UNEP Round Table. NatWest also represented on EIAG. Position Statement developed; agreed by BBA Council and Presidents' Committee. Published in September 1993. Conference for BBA Member Banks in October 1993. Tom Greco, American Bankers Association, kindly attended BBA conference and spoke about American experience. Have then used Position Statement as basis for lobbying press, Ministers, CBI, Law Society, Civil Servants and other opinion formers. Including NGOs and IPCC, hence contact with Jeremy Uggett, Greenpeace and Andrew Diugolecki, IPCC and suggestion that they should attend UNEP Round Table. Also, involvement with EU consultative seminars.

BBA Member Banks Conference October 1993; in two halves: firstly to inform Member Banks of issues – legal framework, American experience, share concerns and spread message in Position Statement. Secondly, what can/should individual banks do? Hilary Thompson, NatWest, spoke about environmental risk management in an individual bank. Also information about how environmental consultants can help, impact on property valuation (lack of environmental professional indemnity insurance cover) impact of environmental factors on land as security and implications in insolvency.

There are three important issues:

- (1) "Exercise of effective control"; banks don't; two-thirds of business customers don't borrow, the one-third that are borrowing at any one time have average borrowing of just £20,000. 96% of businesses are small with a turnover up to £1m

per annum. Mr Justice Millett in MC Bacon Case said banks going about their normal business (assessing borrowing propositions, lending, monitoring borrowing, supporting businesses in difficulties, holding security, realising security and leasing) do not 'exercise effective control'. Banks not competent to be environmental policemen. Why should banks be responsible for the actions of their customers rather than other counterparties? Why treat environment different to health and safety factors or any other licensed/regulated business activity e.g. quotas (agricultural), or broadcasting licenses?

- (2) Banks are entitled to defend themselves. Banks did not start this argument. Not prudent to take on potentially unquantifiable unlimited and uncertain liability. Encourage your countries' industrial and commercial sectors to increase their environmental awareness and organisation. Need to put environment high on Agenda of your national bankers' association. We have a lot to do to educate other interested parties, opinion formers, officials, the press and the public.
- (3) BBA wants to be positive: we need partnerships and communication; need to agree on environmental standards and aims (national, Continental/ European and international - global environmental factors like climate change do not recognise artificial boundaries such as national borders and legal systems). Paying for our Past (past industrial legacy of pollution) - statutory charge for clean-up funded by public purse; need to encourage/assist information and education initiatives. Want to fund environmentally beneficial projects. Environmentally beneficial/friendly projects are good business. Contaminating/polluting projects are bad business. We want to be able to manage environmental risk. Must be able to identify it, quantify it and price it. Unable to proceed if saddled with lender liability/secured lender liability. Average borrowing of small firms £20,000; average cost of clean-up of a site in US \$31m! These spectres must be removed - finance is vital to improve the environment.

Proposal

Send message: essential - message to regulators and legislators worldwide, especially in transitional economies and emerging markets, do not follow the US Fleet Factors route - learn from the American experience - do not make the same mistakes. Want to be positive, want to invest in environmentally beneficial projects and propositions. Can do this if the negative threats about lender liability are removed. The extent of lender liability is a critical factor. We want to be able to get on urgently with the real environmental work as introduced by Jeremy Leggett and Andrew Dlugolecki.

LENDERS & ENVIRONMENTAL LIABILITY

The British Bankers' Association is the principal trade association representing over 300 member banks from more than 60 different countries operating in the UK. This Issues Brief summarises the views of our members on liability for environmental damage, including the costs of clean-up and compensation. This subject has assumed importance recently as the UK Government and the EC undertake reviews of environmental liability.

The Challenge

Environmental liability and regulation pose an important challenge to the Government, the business community and society as a whole.

Any legislation should allow banks to continue to support all sectors of the economy and to fund environmentally beneficial projects. Banks are concerned to ensure that their proper role in environmental matters is understood. Lenders should not be regarded as environmental policemen nor face unlimited liability for contamination caused by others.

Uncertainty

A clear definition of liability and a workable framework of safeguards are essential to enable banks to continue to lend where environmental risks are perceived to be high.

In the US, whole business sectors are now being deprived of finance because of the unquantifiable risks involved. It would be a considerable mistake if this were allowed to happen in the UK. The lessons of the American experience show that there is a need to develop a clear framework to minimise legal argument and maximise environmental clean-up without inhibiting economic growth.

Dry cleaners, printers, petrol stations, farms and agrochemical suppliers, or any business whose operations are potentially hazardous to the environment, could have difficulty in raising finance. Indeed, those very businesses which most need funds to improve their environmental performance may find themselves without such finance.

The Role of Lenders

Lenders recognise that the quality of a borrower's environmental performance is one of the determinants of the success of a business. Many banks now assess environmental risk as an integral part of their lending process.

The ability of banks to influence business is often overstated. In the UK only one third of small businesses (annual turnover under £1 million) borrow at any one time. On average they borrow about £20,000. Whatever risk assessment of business propositions is undertaken must be cost effective in relation to the amount advanced.

Banks have a prudential duty to their depositors and shareholders not to use their depositors' funds to support businesses where they may be exposed to potential unlimited liability as a consequence of lending. This is not a matter of choice for the banks. In the worst case, if environmental risks are not quantifiable then a bank's ability to lend to certain sectors will be inhibited.

Liability

Banks support the widely accepted principle of the "polluter pays" but would like to emphasise that certain safeguards need to be in place, including:

- retrospective or historic liability should not be imposed on anyone for acts which were legal or met the established environmental
- standards of the day
- banks should not be liable merely:
 - by lending
 - by monitoring a borrower's performance
 - by helping a customer trade out of difficulty
 - by taking steps to recover their debt or realise their security
 - or simply as a consequence of holding land or other assets as security.

These safeguards are necessary to ensure that lenders do not become the "deep pockets" behind a polluter who for one reason or another cannot pay for the clean-up or compensation.

The Way Forward

The Government must resolve the liability issue quickly. The setting of standards and their observance is properly the role of the Government and the enforcement agencies. However, the banks wish to continue to participate in the ongoing debate on environmental issues.

For further information, (and copies of the full BBA Position Statement on Banks & the Environment) please contact Dr Catherine Sweet, Director of Communications & External Affairs, or Peter Blackman, Assistant Director, and Secretary to the Environmental Issues Advisory Group, at the BBA on 071~23 4001. Issues Briefs represent the views of the BBA Individual banks' views and practices may of course differ from that of the Trade Association.

BANKS AND THE ENVIRONMENT

Preamble

1. The British Bankers' Association is the trade association for all banks operating in the UK and licensed to do so by the Bank of England. Its 330 or so Members include the major retail banks, merchant banks, foreign banks and other banking institutions.

2. This Association welcomes the Advisory Committee on Business and the Environment (ACBE) Financial Sector Working Group Report of February 1993 which comprehensively covered the three issues of:

- disclosure of information on environmental performance;
- improving the environmental performance of financial sector firms and their customers; and,
- liability for damage to the environment.”

3. The banks are in broad agreement with the ACBE Report's descriptions, statements of the present position and its conclusions. Annex H, The views of lenders, presents a full and balanced rehearsal of the factors affecting the banking community.

4. It is unnecessary for us to reiterate the work of ACBE; it would be duplication to do so. Nevertheless this paper should be read in the context of the ACBE Report. This paper concentrates specifically on the position of banks as lenders.

Introduction

5. Environmental issues have become an increasingly important part of everyday life. This trend has been, and continues to be, reflected in a growth in environmental legislation and regulation.

6. The challenge facing Governments, business communities and society as a whole is how to apportion environmental liability, including that which relates to historical pollution.

7. In our view the objective should be to achieve this equitably based upon the widely accepted principle that the polluter should pay.

8. Banks are conscious of their responsibility to the communities and the environment in which they operate. This is evidenced by the policies and practices which individual banks follow, both in day-to-day operations and external relationships.

9. However, banks are concerned to ensure that their proper role in environmental matters is understood and that environmental legislation reflects the scope of that role without restricting the ability to carry on business in a responsible way.

Liability for Environmental Damage

10. The ACBE Report identified that business remains strongly in favour of a fault based liability regime. However, it observed that if strict liability is the chosen solution then there must be clear safeguards and this we strongly support.

11. An unqualified strict (no fault) or strict joint and several liability regime has the potential to create uncertainty, which undermines the confidence of investors and lenders. It may also result in the creation of innocent victims who are faced with uninsured and uninsurable losses and whose consequent collapse will only result in a reduction in economic output.

12. The EC Green Paper on remedying Environmental Damage also rehearses the advantages and disadvantages of strict (or strict joint and several) liability in this context and amongst its conclusions is that:

“Lessons must be learned from national and international precedents in strict liability and the disadvantages and implications for the scope and structure of such a regime must be foreseen (how lenders and financial institutions will be affected, for example). A strict liability regime must only have the result intended, namely the restoration of environmental damage.” (4-1-2c)

13. The Green Paper further recognises the potential pitfalls of joint and several strict liability:

“This can cause several problems, including congestion in the Courts. Inequity results if the injured party sues the party with the most financial assets first instead of the party who caused the most damage. This is known as the “deep pockets” effect. Joint and several liability may also lead to “forum shopping”, if parties are from different countries and one country’s laws are more favourable to the injured party.” (2-1-4)

“One solution could therefore consist of combining the strengths of a liability regime with the advantages of compensation systems. “ (4.2)

14. The Council of Europe Convention on Civil Liability for Damage Resulting from Activities Dangerous to the Environment (which document is reflected in the EC Green Paper), provides for strict liability, but subject to a number of exemptions. Responsibility is placed upon the “operator” defined as the person who exercises the control of the dangerous activity. However, of particular interest to lenders, the Convention’s explanatory report includes:

“An outside person who made possible or facilitated a dangerous activity, for example by lending funds for investment may not be considered to be the operator, unless he exercises effective control over the activity in question. Likewise a creditor who exercises his rights in virtue of securities held on equipment for the dangerous activity is not, in principle, the operator within the meaning of the Convention.” (point 31)

15. Such an interpretation is important to the finance sector but is no substitute for complete clarity within the primary source. Furthermore, concepts such as operator appear elsewhere for example in the Integrated Pollution Prevention and Control Directive (sixth draft) where it means “any natural or

legal person who operates the installation or who has been delegated decisive economic power over it”. Experience suggests that where there is room for interpretation, even where legislation appears to be framed with protection of innocent third parties in mind as in the US Comprehensive Environmental Response Compensation and Liability Act, 1980 (CERCLA) unintended consequences may emerge.

16. The leading experience of the US in addressing environmental concerns is very well documented elsewhere. Suffice it to say that:

- Fleet Factors Corp - v - United States, 901 F.2d 1550 (11th Cir. 1990) crystallised the unintended interpretation that a lender may be in a position to influence the environmental business decisions of an enterprise;

- Annex G in the ACBE Report observes that “Fundamental flaws in the concept [of a liability regime in the US] have resulted in considerable costs being borne by industry and its insurers, much of which has benefitted only the legal profession. Very few sites have been cleaned up”; and,

- in the context of CERCLA and following Fleet Factors an American Bankers’ Association survey found that 62.5% of community commercial banks had rejected loan applications or potential borrowers based on the possibility of environmental liability and 45.8% had completely discontinued financing some sectors, for instance service stations and -chemical businesses, because of fear of environmental liability.

17. Also, in Europe it needs to be remembered that there are fundamental differences in the legal regimes at work in some countries. The English system is based on common law whilst many Continental countries have a civil law system. The resulting conceptual differences need to be kept in mind when EC and other European measures are being considered or developed.

The Lenders Perspective

18. The ACBE Report represents a timely appraisal of the alternatives available to legislators for apportioning environmental liability. We welcome this initiative and we generally endorse the conclusions and recommendations.

19. ACBE deduced that:

“Lenders and insurers are being deterred from conducting business by the prospect of significant legislative changes which may have an adverse impact upon them. Where contingent liabilities are deemed too great or are indeterminable or open-ended (whether in time or amount), or where the future approach for liability is uncertain, lenders will not lend and this could seriously impede capital flows to certain sectors of industry.” (page 7-point 15)

20. Equally, it should be recognised that existing law already gives rise to prospective liability which is inhibiting the normal flow of commerce and lending.

21. Banks believe there is a need to separate historical from future liabilities and ACBE concludes that:

“Retrospective liability should not be imposed for acts that were legal or met the established environmental standards of the day.” (page 8 point(16)

and,

“Liability for this [historical pollution] should be borne by the polluter providing legal culpability at the time of pollution. Where the polluter cannot or is not liable to pay, this should be treated as a social cost.” (page 8 - point 17)

22. The final point above may not find favour with Government because of the public sector funding implications. This is understood but it should not be acceptable to fix the financial burden upon the most

nearly responsible party who has sufficiently deep pockets. Indeed the EC Green Paper observes that:

“... if the operator has fully disclosed all relevant data for evaluation and complied with the standards set in the permit, there may be reasons for holding the public authority - and ultimately the tax payer

- responsible for ensuing damage. It would provide the operator with an incentive for full disclosure and compliance with the permit so as to avoid liability. It would provide the Government authority with an incentive to make responsible decisions, including setting precise and clear restrictions in permits ...” (2-1-5ii).

23. In the absence of a “State of the art” defence to Strict liability we question how industry can plan, invest and remain competitive. Business could face the prospect of subsequent retrospective liability measured against scientific criteria “yet to be determined”.

24. Banks also contend that priority should be accorded to the clean up of past pollution when and where the risk of additional harm to the immediate environment emerges. The clean up of ‘dormant’ pollution which poses no such threat need not be undertaken for its own sake.

The Role of Lenders

25. Banks, in common with other service providers and public authorities, have a direct relationship with the majority of businesses in the UK.

26. It is sometimes argued that lenders are in a unique position, or a better position than others, to influence a business’s priorities and are therefore well placed to drive forward the higher environmental standards which we all wish to see adopted. This represents a fundamental misunderstanding of the role of lenders and of the depth of involvement in the management of their borrowers’ businesses.

27. The Bank of England Report “Bank Lending to Smaller Businesses” published in January 1993 showed that at any one time “about two-thirds of small business accounts are in credit”. “The average amount borrowed for firms with a turnover of less than £1 million (the great majority [3.3m accounts]) is a little over £20,000.”

28. The general perception appears to be that banks have a particular ability to influence businesses through the lending relationship. The facts show that to whatever degree that influence can be exercised, it only affects one third of small businesses at any one time. Also, whatever risk analysis and assessment of the business proposition are undertaken must be cost effective in relation to the (relatively small) amount advanced in most cases both for the banks and the businesses.

29. Lenders do recognise that the quality of a borrower’s environmental performance is one of the key determinants in the success of the business. Individual banks - will increasingly expect their customers to demonstrate that this aspect of their management is effective. It will be one of the issues which lenders address in making a risk assessment.

30. In fact, the lending relationship is something of a blunt instrument where environmental matters are concerned. The American experience (described above) shows that when uncertainty exists, lenders will tend to avoid a relationship.

31. Furthermore, lenders are not environmental specialists, and financial institutions do not have the expertise to be, nor should they be seen as, environmental policemen. The setting of standards and their enforcement is properly the role of the Government and the enforcement agencies.

Conclusion/Recommendations

32. It should be recognised that when banks lend it is the shareholders’ and depositors’ funds which are at stake. Banks accept that if a lending decision is subsequently found to have been unsound the loan may prove irrecoverable. This risk factor is taken into account through the interest margin.

33. If lenders are confronted with potentially unlimited contingent liability for the clean up costs of borrowers then this could have a major impact upon capital adequacy requirements. This may also as a consequence inhibit lenders from supporting certain sectors of the economy, restrict the flow of funds available for environmentally beneficial technology and overall affect the ability of lenders to support industry in general. This would be of particular significance at a time -when a national economy was emerging from recession.

34. We therefore believe that EC and UK environmental legislation should contain appropriate exemption from liability for lenders who have acted in the ordinary course of their business and have not directly contributed to environmental -damage caused by their customer.

35. We consider that such exemptions should reflect the following four situations:

a) **Passive Lender Situation** – a lender should not be subject to environmental liability caused by a customer, if it has done nothing more than provide finance in the normal course of its business and has taken no active role in the business that has directly led to the creation of environmental damage

Therefore a lender’s exposure should continue to be, as has traditionally been the case, limited to the amount of the loan granted and effectively be capped at that level.

b) **Legal Ownership** – a lender should not incur liability merely because it holds a charge over or it is the “legal” owner of goods or other -property under the terms of a financing structure, for instance, chattel or property leasing.

c) **Loan Procedures and Administration** - a lender should be able to conduct its normal lending practices without being regarded as being “concerned in the management” of the borrower’s business, for the purposes of environmental law.

To give examples, a lender should, inter alia and

without risk of potential environmental liability, be able to:

- seek and supervise lending covenants, warranties and events of default;
- stipulate and review environmental consultancy/audit reports covering land or processes;
- regularly obtain financial and other data from the borrower and provide ongoing financial advice; and,
- participate in “loan workout” activities including; renegotiating or restructuring the terms of security, requiring payment of additional interest, exercising forbearance, providing specific or general financial advice or guidance, and exercising any right or remedy the lender is entitled to by law and under loan documentation.

d) Enforcement of Security - whilst the banks acknowledge that a lender may fall within the ambit of environmental legislation, if a bank takes control of an enterprise and continues the business operations, we do not believe that a lender who takes possession of property for the purposes of security enforcement and/or having taken possession maintains business activities on such property (if this is an appropriate way to preserve the assets prior to the realisation thereof) should be subject to prospective liability.

The position of banks in the UK is potentially far worse than that of their Continental counterparts. The reason for this is the difference in the way in which security is enforced. In the UK, a lender enforces a security by taking possession - or by appointing a receiver to do so. On the other hand, in most Continental European countries, the banks never take possession because the entire procedure is conducted by the court. Thus the difficulty of an adverse interpretation of “control” is, essentially, a UK one - and one which the UK Government has to take on if there is to be a level playing field between various member states.

Careful consideration should also be given to the protection which should be extended to receivers, trustees in bankruptcy and liquidators, given the essential function which these office holders perform and also to trustees generally given the personal nature of their liabilities.⁸

36. In general, we believe that:

- there is no justification for adopting the so called “deep pockets syndrome”, of seeking to impose environmental liability on a party such as a lender who has no direct causal link to the creation of pollution, simply because that party has a significant asset base;
- there should be wide consultation with the financial services industry throughout the development of legislation and discussion with financial experts in respect of market mechanisms, in order that there is no misunderstanding between the legislators and the financial sector as to how certain markets operate and what could be the effect of potential legislation; and,
- future legislation should be clear and unambiguous, even if this means that some existing legislation needs amending as there are cases where there are contradictory or ambiguous concepts of the “person primarily responsible”.

37. Government should clearly define what constitutes pollution, the clean-up standards which should be applied and how business may expect to be held accountable for its environmental performance going forward. Such transparency is essential to ensure the competitiveness of UK industry and commerce.

38. The banks want to be involved in the debate and to contribute fully towards an integrated strategic approach to the totality of environmental issues. They stand ready to do so within the limitations of their experience and expertise but recognising their corporate and commercial responsibilities to the community at large as well as to their shareholders, depositors, customers and staff.

RESPONSE TO “PAYING FOR OUR PAST”

The British Bankers’ Association (BBA) is the principal trade association representing over 300 member banks from more than 60 different countries operating in the UK.

The BBA welcomes the opportunity to respond to “Paying for our Past”, the Consultation Paper from the Department of the Environment and the Welsh Office. As requested, this response offers some general comments and then addresses the questions posed in the Paper.

GENERAL COMMENTS

The banks are firmly committed to continue to support, through lending and other services, projects which will remedy contamination and/or benefit the environment. As part of the normal lending function, banks increasingly consider environmental factors and performance in managing risk. To protect depositors, supervisors require such risks to be determinable and would not permit banks to incur potentially unquantifiable, unlimited liabilities. The background to this is dealt with more fully in the attached BBA Position - Statement which also sets Out the other views and concerns of the banks.

In Company Law, responsibility for the effects of business operations lies with those who exercise effective control in the management of the enterprise. Simply by lending money, banks are not involved in the commercial operation or management of their customers. Banks should not be liable for clean up and compensation costs for contamination caused by their customers merely by:

- lending;
- monitoring a borrower’s performance;
- holding land or other assets as security;
- helping a customer trade Out of difficulty;
- recovering debts or realising security, or;
- leasing.

We acknowledge that sometimes the interests of business and commerce appear to conflict with the

immediate priority to protect public health and to prevent deterioration of the environment. A balance needs to be maintained. The cost of cleaning up contamination should properly be passed to the polluter where liability can be established either on the basis of non- compliance or foreseeability of the harm which has occurred. However, if liability is apportioned on an arbitrary basis, purely to avoid recourse to the public purse, then this may have a significantly debilitating effect upon the confidence of business and commerce and therefore influence investment and spending priority decisions. in turn this could undermine the economic activity which is necessary to pay for the improvement in environmental standards which we all seek.

In our view liability is a blunt weapon and Government should actively - explore the potential for creating financial incentives. These might include tax breaks, planning gain, and protection from liability for those who voluntarily tackle historical contamination. ‘Sector” funds designed, on a voluntary basis, to relieve the State of financial responsibility might also be encouraged in this way.

Care should be taken to avoid creating disincentives for those who are able to “do a little” to clean up the envirOnment. Regulators should be able to reflect this in their actions, where there is no immediate or identified harm to human health in prospect.

Whilst acknowledging the difficulties, we believe it is necessary to distinguish somehow between historical contamination (from which we would argue that many, if not all sectors of society have benefited, including the Exchequer and therefore the tax payer) and future activities which cause pollution. A framework of environmental standards is required to enable the business community to quantify and price environmental risks.

Finally, dissemination of environmental information, particularly to the small and medium size enterprises should also be encouraged with the Government and regulators taking a strong lead. The banks are very keen to see a significant improvement in the environmental awareness of all industrial and

commercial enterprises. We look forward to having the opportunity to continue to discuss ways in which this can be done.

The following specific comments reply to the questions put in "Paying for our Past":

Issue A

(Q1) Do you consider that the priorities proposed for the policy in paragraph 4A.5 above are appropriate?

(1) The BBA is in broad agreement with the declared objectives and acknowledges the difficulty which the Government faces in trying to resolve this complex issue. We consider it very important for there to be an efficient market in land including that which has potential for clean-up or which has been remediated.

For this to occur, there must be ready access to finance. If the market is to be effective, the liability regime must be transparent. Explicit legal definitions of those potentially responsible eg. "the polluter"/"the owner", clear and comprehensive clean-up standards which reflect the "state of the art", and possibly a difference in approach between historical and future contamination, should form the foundations of policy in this area. Also, the liability regime should not discourage anyone from taking measures which, whilst they do not remediate land completely, do bring about some partial improvement Or at least make a site safer.

Issue B

(Q2) Should there be greater consistency in regulators' powers?

(2) There should be consistency in regulators' powers and duties. There should be some flexibility remaining in the enforcement thereof, to ensure that the best practical solution is not submerged by litigation/insolvency. This should be achieved by the establishment of an overall framework of environmental standards and definitions by Government to ensure a level playing field. To avoid

any distortion in competition, this could be administered by an Environmental Protection Agency, which could be at national, European or even international, level.

(Q3) Should regulators make greater efforts to help to increase understanding in markets of what they do, especially about protecting the unowned environment?

(3) The BBA agrees with the suggestion in principle and considers that if a framework is established, as suggested above, then the regulators should give SMEs in particular an explanation of what is required of them.

(Q4) Should regulators continue to be able to pursue one or more persons? To what extent, if any, should there be provision for limiting the financial exposure of some persons or bodies such as trustees, receivers, lenders or homeowners; and, if so, who should pay instead?

(4) The BBA believes regulators should pursue the actual polluter. If more than one party is directly responsible then the regulators should pursue each party in proportion to their contribution to the contamination. In making the -above statement, the BBA is mindful of the U S experience, where joint and several liability has had a detrimental effect on the business sector with little apparent benefit to the environment.

The ACBE Finance Sector Working Group report said that "Liability for this [historical pollution] should be borne by the polluter providing legal culpability at the time of pollution. Where the polluter cannot or is not liable to pay, this should be treated as a social cost." In order to mitigate this impact on the public purse, there may be argument for saying that any public money spent in cleaning-up unattributable contamination which poses a health risk should be chargeable against the value of the property as a statutory first charge. Any such clean-up must reach an acceptable minimum standard of suitability for its intended use.

Partial remediation should be encouraged by limiting the liability of the person making a site safe or partially cleaning-up the contamination to any deterioration clearly caused as a direct consequence of their action.

It is essential that certain enabling functions within the economy, such as receivers, trustees and lenders, are not fixed with potentially unlimited liability merely as a consequence of their role. They should only attract liability where they have directly controlled the activity which has resulted in contamination. In addition, home-owners should be liable only if they actually cause the pollution.

Lenders are not polluters simply as a result of their lending activities, and are therefore seeking an exemption from liability. The BBA Position Statement rehearses the considerations in this respect and a copy of this is attached.

(Q5) What, if anything, should be done about the exemptions in respect of abandoned mines?

(5) The BBA is not aware of any justification for such exemptions especially where the contamination has occurred as a direct and foreseeable consequence of the production activities involved in mining.

Issue C

(Q6) Do you consider that, subject to any further consideration of the House of Lords judgment in the Cambridge case, there should be the minimum of change to private, Common Law, undertaken only where it causes tensions or uncertain ties, and not undertaken solely to keep Common Law liability in line with regulatory obligations?

(6) The BBA agrees with the House of Lords' suggestion that the principles of strict liability should only be extended by statute, and not by Common Law. The banks do not believe that any such extension is either necessary or desirable. The BBA supports the statement in "Paying for Our Past" (4C.6) that the Courts should determine the extent of

each individual's exposure. If strict liability were extended by statute, in line with the obiter dicta in the Cambridge case, such alteration should be clear and preclude the Courts from interpreting it too widely. Nevertheless, it is recognised that Common Law actions do not necessarily lead to clean-up.

Issue D

(Q7) Do you consider that the current mixture of strict and fault-based approaches strikes broadly correct balances in regulatory and Common Law between the public interest and the interests of plaintiffs on one side and those of liable persons on the other?

(7) Yes (see our answer to Question 6 above). Whilst fully understanding and sympathising with the points made under paragraph 4D.1, the BBA does not see any advantage in extending the concept of strict liability by statute, as alluded to by the House of Lords in the Cambridge case.

(Q8) Do you consider that there should be any changes, in statute law or Common Law, in the availability of the following defences in relation to historic pollution:

(a) a "State of the Art" defence;

(b) the unforeseeability of damage; or

(c) regulatory compliance?

(8) In the case of historical pollution, and if there is strict liability, then:

(a) It is believed that there should be a State of the Art defence. Retrospective legislation/retroactive standards would be inequitable and potentially discourage the identification, investigation and phased remediation of pollution.

(b) It is contended that there should be a defence that the damage was not reasonably foreseeable.

(c) It is believed that regulatory compliance should

be available as a valid defence. As the EC Green Paper on Remedying Environmental Damage observes, it may be appropriate for regulators to share responsibility, given their role in setting the standards which society should expect; this would have cost implications for the public purse.

Issue E

(Q9) Do you consider that it need nor be inconsistent with the PPP to provide for the enforcement of regulatory obligations on others, especially the owner', to whom the polluter has transferred the burden of meeting the obligations however that transfer took place; and that it should be as difficult as possible to evade responsibility through corporate or contractual devices.

(9) We found this question rather difficult to follow, in particular we were unsure as to the meaning of "however that transfer took place", but have understood the question to mean the following:

- a) Should the "owner" of land be liable even if the owner is not the polluter?
- b) Should transfers of title designed solely to evade environmental liability be voidable in relation to such obligations?

a) We do not think that an owner of land who is not the polluter should be liable, unless a transfer of ownership was made with the deliberate intent of evading environmental liability and/or the owner purchased the land in the knowledge of the contamination and at a price which reflected the land in its contaminated state.

b) it should be difficult for the polluter to evade responsibility, ie a transaction whose primary purpose is to evade liability for environmental contamination should be voidable.

(Q10) Do you consider that:

(a) liabilities for contaminated land should

generally be met as they fall due or arise rather than in advance through contributions to funds or insurance; but

(b) industry sectors should be encouraged to set up voluntary arrangements for sharing or or funding liabilities for contamination?

(10) On balance, the BBA would support the principle that liabilities for contaminated land should generally be met as they fall due or as they arise, it being felt that it is up to each individual sector to decide whether or not to mitigate any liability by a mutual fund or insurance. It may be that, with the benefit of experience and a suitable framework of liability and regulation, an insurance market should eventually emerge to cover future liability. This will necessarily depend upon the ability to quantify risk and price it.

Issue F

(Q11) Do you consider that it is for DoE/WO, professional practitioners and local authorities to identify and to advise on the best practices on the flow of information about actual or potential contamination, especially through improvements to the conveyancing process?

(11) Yes. The BBA believes that its members might be willing to assist in the collation of information from customers such as environmental statements or Land Quality Statements which could be used to compile a register of land uses. It would be difficult to enforce an obligation on customers to provide this information unless this is a pre-requisite to the registration of transfers, charges, etc. It would also need the co-operation of other professionals. It is also observed that such a register/database of information would not have the effect of blighting land because ultimately all former/present land usage, not purely contaminative or potentially contaminative land use, would be recorded. It may be that this could be incorporated into the existing Land Registry system.

(Q12) Should DoE continue with its current priorities for research and the development of guidance on the identification and assessment of risks?

(12) Yes, such research is important in the context of having clear standards and guidelines for the remediation of land.

(Q13) Do you consider that there should be no change in the application of the principle of caveat emptor in land transactions as regards environmental liabilities?

(13) We believe that the caveat emptor rule has wider implications and it is thus inappropriate to consider it simply in an environmental context. Reviews of the rule have taken place in the past and have concluded that on balance, it should be retained.

Issue G

(Q14) Should the planning authorities, English Partnerships and the Welsh Development Agency, in consultation with the pollution control regulators, aim for the use or re-use of contaminated land, where practicable and subject to dealing with any threats of harm to health or the environment?

(14) Yes.

(Q15) Should the Environment Agency be given a general responsibility to establish a framework of guidance for dealing with contaminated land?

(15) We believe that we have touched upon this question in our answer to (2) but wish to confirm that the BBA agrees to the proposition.

Philippe Van Blerk
Legal Adviser Fédération Bancaire de l'Union
Européenne

At the European level, the Banking Federation has actively monitored progress in recent years regarding the development of environmental legislation. An important event was the publication on the 14th of May 1993 of the EC Commission Green Paper on Remedying Environmental Damage. This Green Paper deals with a great many broad policy issues regarding the environmental legislation and it aims to be a discussion paper between the various economic operators, environmental groups and the European authorities. As such it is therefore not a legislative measure, although it could be considered as a possible introduction to further legislation. It is as yet, however, still not certain, though highly probable, that substantive EC legislation will emerge to regulate liability for environmental damage.

This Green Paper focuses, amongst other issues, on whether strict rather than fault-based liability should be adopted, what the limitations on liability could be, and how to provide insurance cover. These questions are important for the banking industry, especially given our knowledge of the negative effects which US environmental legislation (CERCLA Act) had on the banking industry.

The essential principles regarding the environment as enshrined in Article 130r of the EC Treaty are -that the EC Community policy shall be based on the precautionary principle and on the principle that preventive action should be taken; that environmental damage should as a priority be rectified at source, and that the polluter should pay.

We are not averse to these principles and indeed attach great importance to the "polluter-pays" principle. We believe that the party directly responsible for exercising control over activities causing damage to the environment should bear the costs for it. It would be impossible to operate under a regime where persons were held responsible for the

actions of others. Mechanisms that imposed liability on lenders although they had committed no fault of their own, like for instance joint and several strict liability, without such defences as state-of-the art and force majeure, would not be acceptable for European banks. The same is true with regard to potential liability for damage which occurred in the past when the then current environmental standards, which might be considered today as outdated, were respected at the time.

On the issue of liability, European bankers became increasingly concerned when the EC Commission issued in 1989 its draft Directive on Civil Liability for Damage Caused by Waste. In this draft not only could the producer of waste be held strictly liable, but so could "the person who had actual control of the waste giving rise to the damage or impairment of the environment occurred, if he is not able within a reasonable period to identify the producer" (Art. 2.2(b)). Wording like "actual control" was deemed to be dangerous since it could lead to cases where, as in the US, banks had incurred liability for environmental damage because they had the capacity to influence the borrower's environmental performance. At that time the Banking Federation informed the EC Commission Directorate General XI, responsible for environmental matters, of its concerns. Work on this amended proposal for a directive has meanwhile been suspended following publication of the Green Paper. More recently, in 1993, the Council of Europe opened for signature its Convention on Civil Liability for Damage resulting from Activities Dangerous to the Environment. Recital 31 of its Explanatory Report also contained wording which, although initially intended to give assurance to the banking industry with regard to their possible liability, might be problematic for financial institutions because of its imprecision. It says: "an outside person .. may not be considered to be the operator, unless he exercises effective control over the activity in question" (Likewise, a creditor who exercises his rights by virtue of sureties held on equipment for the dangerous activity is not, in principle, the operator within the meaning of the Convention.)

Before the summer, the Banking Federation sent a note to the Director General of Directorate General XI explaining our members' understanding of the notion of to 'exercise effective control'.

The over-riding concern was that banks should not be held liable for clean-up and compensation costs for contamination caused by their customers merely through, inter alia:

- lending;
- monitoring a borrower's performance;
- involvement in a customer's financial decisions;
- appointment of a representative on the Board of a customer;
- helping a customer to trade out of difficulty;
- holding land or other assets as security;
- taking steps to recover their debt or realise their security, in which context the specific UK and Irish situation of "mortgagees in possession" should be borne in mind; or
- leasing.

In our view, European legislators cannot ignore the negative consequences of the entry into force in the United States in 1980 of the CERCLA legislation. While the intention of this legislation is clearly to provide an exemption absolving financial institutions from liability, its vague wording of has enabled the courts to give interpretations which had not been foreseen at the time of entry into force of the legislation. This has had serious repercussions for banks. In addition, "environmentally risky" companies and industries, and in particular small and medium-sized enterprises, have encountered serious difficulties in obtaining access to the funds necessary to maintain and expand their activities.

We are convinced that more and more European banks are conscious of environmental protection

issues and acknowledge the fact that they too have a role to play in the sustainable development of the environment. But there is presently a large majority which opposes any legislation which might impose on banks, either directly or indirectly, the requirement to police the activities of their customers for environmental compliance. One should make a clear distinction between how a bank can improve its own operations to contribute in a positive manner to the environment and the question of whether they should ensure that their customers too respect the environment.

It is obvious that environmental risks which might result in the financial liability of the customer or which could decrease the value of any underlying securities should be adequately assessed and should be part of the various criteria of risk appraisal by a prudent lender when granting loans. This is one of a number of risks which should be taken into consideration when granting loans.

There is, nevertheless, still a big difference today in, on the one hand, accepting the principle of taking environmental risks into account when performing due diligence checks prior to granting credit and, on the other hand, the day-to-day practice of many European banks in applying this principle. The reality is that most of them still lack the expertise and resources to judge the environmental performance and quality of their customers. Verifications regarding environmental matters are often limited to some routine proceedings. One could, however, query to what extent banks should have such expertise and what could realistically be required from them in order to develop it. Even then, the possibility still exists that an enterprise which would, by the nature of its activities, be considered environmentally friendly and, consequently, obtain a positive environmental rating, might cause serious damage to the environment.

A further difficult question is whether, even if assessing environmental risks in the course of due diligence procedures prior to granting loans is becoming more and more common practice, banks should monitor, once the loan has been granted, their

customers' environmental performance and environmental compliance with statutory norms.

This does not, nor should it, form part of the role of banks. Verifying whether customers have taken state-of-the-art measures in the field of environmental protection would be against the essential principle of non-interference in the customers' activities as it exists in most European continental countries.

The European Banking Federation will continue its work on these important environmental matters and will endeavour to prevent damaging provisions for banks arising in future European legislation.

DAY ONE

**SESSION FOUR:
ENVIRONMENTAL CREDIT RISK MANAGEMENT**

Dr. Sven M. Hansen
Head Environmental Management Services
Union Bank of Switzerland
Phone Zurich: + 1/234 20 30

ENVIRONMENTAL POLICY AT UNION BANK OF SWITZERLAND
OUR STRATEGY FOR SUSTAINABLE BANKING

Union Bank of Switzerland endeavours to address environmental risks and identify environmental opportunities in all its banking activities through a comprehensive environmental policy

Banks and the environment

The protection of the natural environment has become one of the most urgent issues facing our society because as the damage to the world around us continues to increase at an alarming rate. Unfortunately, the success of environmentally-oriented protection measures in some countries and by some companies is largely undermined by the growth of the world's population and by ever increasing consumption. The problem of increasing environmental damage faces not only nations but also companies and individuals.

How banks see this challenge still remains something of a mystery to most individuals. Many bank employees and other stakeholders do not see any connection between banking operations and environmental damage. For others, the phrase "banking and the environment" conjures up the idea that banks also finance large chemical firms, car manufacturers and oil companies which might be "environmental offenders". They believe that banks have the opportunity – even the obligation – to influence these companies to reduce pollution. In reality, the answer to the question of how banks affect the environment lies somewhere between these two perceptions. The work processes of the service sector are, for the most part, less detrimental than those of the manufacturing industry yet, contrary to what many people believe, all banking activities also have some direct and indirect impact on the environment.

We firmly believe that in the long run, banks can only be successful if they incorporate environmental aspects into their activities. The signing of both the International Chamber of Commerce's "Business Charter for Sustainable Development" and the UN Environment Programme's Declaration on "Banking and the Environment" demonstrates that Union Bank of Switzerland (UBS) ranks environmental protection as a goal of great importance.

UBS's environmental policy

Environmental aspects are, however, not a new issue for UBS. In fact, our Bank created an energy functional unit in 1978, and in 1988 was the first Swiss bank to appoint an environmental protection officer. In 1992, the Executive Board set up a task force to carry out an analysis of UBS's environmental performance and to develop a policy to integrate environmental aspects into all the Bank's activities. This environmental policy consists of a three-pronged strategy:

- The first prong consists of the intensification of efforts to minimise the environmental impact of UBS's own operations, especially in the field of energy consumption. The high amount of energy necessary to equip and service the workstations in a bank as large as UBS is a case in point. In fact, between 1990 and 1993, our Bank reduced total power consumption in Switzerland by more than 25% despite the considerable increase in business activities. Recently our Executive Board approved "Energy Vision 2000", a blueprint for major energy savings. It is our goal to cut energy consumption by 30% by the year 2000. This entails reducing our electric power use by 40%.

The 3-prong strategy of UBS's Environmental Policy



- Promotion of environmental concerns in the activities of individual divisions, especially in the lending business is the second prong of our strategy. Public opinion places high value on banks which take their societal and environmental responsibility seriously. An example of such responsibility is the challenge of incorporating and applying environmental criteria to loan policies. The application of environmental criteria to liability and lending risks in banking offers numerous possibilities for optimising a banks risk management and for promoting environmentally conscious behavior throughout the economy.
- The third prong of our environmental policy consists of the creation of a management system to ensure that environmental considerations are incorporated into all activities at UBS. This management system puts heavy emphasis on training, communication, and controlling activities. An important aspect thereof is the creation of a central Environmental Management Services unit which co-ordinates environmental activities throughout the UBS Group. To date, UBS has 12 specialists working full-time on environmental matters and another 30 involved in related work at headquarters.

As mentioned, at UBS environmental aspects are becoming increasingly important in the overall assessment of credit commitments. In the past, the appraisal of environmental risks formed an integral part of credit evaluation in project and export financing, as well as in international corporate banking activities. For its domestic corporate banking activities UBS recently introduced a new environmental risk assessment policy consisting of four key elements.

The four elements of the domestic corporate banking environmental policy



Information Campaign

The information campaign consists of nationwide, regional and local presentations and workshops for credit officers and of informal meetings with department heads. In addition, several articles have been published in our internal newspaper and in our corporate banking bulletin.

Training

Environmental aspects were integrated into the curriculum of four out of six standard week-long seminars for credit officers. The presentations, consisting of workshops and case studies, were planned to sensitize credit officers to the topic of lender liability and other environmental risks and to encourage them to apply the policy in their daily work.

Directive on Environmental Opportunities and Risks

The directive on environmental opportunities and risks in lending operations details a three-stage appraisal procedure for small- and mid-sized companies. This procedure is a component of the overall credit appraisal procedure. In the first stage a rough appraisal of potential environmental risks related to the firm requesting a _ credit is made. The credit officer is required to respond Yes or No to three short questions concerning the possibility of existing site contamination, of environmental risks relating to the firm's business activities, and of pressure exerted on the firm by outside forces, such as legislators, the media, regulators, or lobbying groups.

If potential risks are identified at this stage, a more indepth examination, consisting of a three-page checklist, is carried out. Here the above three questions are answered in more detail. In addition questions about management's environmental awareness and organisational measures relating to environmental protection must be answered. A positive impact on this part of the credit appraisal procedure can result if the firm requesting the credit is especially well positioned in the market due to its innovative management of environmental issues. Similarly, the delivery of state-of-the-art products and services in the field of environmental technology and consulting can also result in a positive evaluation of the environmental aspects of the credit appraisal procedure. However, if the credit officer concludes that the potential environmental risks are not well managed and thus create a credit risk that may be too great for the Bank, he or she will have to move to the third stage.

This last stage consists of the inclusion in the appraisal process of the specialised advice given by our internal environmental consultants working at the Environment Desk within the Corporate Banking department. The opinion of these specialists, sometimes reinforced by that of external consultants, will be used by the credit officer to make the final lending decision.

The Corporate Banking Environment Desk and Control Mechanisms

This office is charged with giving credit officers the specialised advice needed to determine whether the potential environmental risks inherent in the operations and/or real estate holdings of a corporate client are being competently managed and, if so, if the credit risk to UBS falls within a tolerable range. Specifically, duties consist of the following:

- advising credit officers
- basic site contamination survey
- feasibility analysis
- basic analysis of environmental impact statements
- market research
- procurement of external consultants.

The application of the directive on Environmental Opportunities and Risks is controlled by our internal Credit Administration units.

We are aware that the new environmental risk assessment policy, consisting of guidelines, directives, control mechanisms, and an on-going information and training campaign will take years to be fully integrated into our standard credit appraisal procedure. Persistence and cooperation on this topic with other Swiss banks will have a definite impact throughout our economy. We believe that such a thorough integration of environmental aspects into our credit appraisal procedures is an important step towards Sustainable Banking.

Dr. Victor Bruns
First Vice President Corporate Customer
Department, Deutsche Bank

Environmental Credit Risk Management

We have all come to talk about commercial banking and the environment. So there is at least one point we can all agree on, namely that banking, and in particular business with corporate customers, is increasingly being confronted with environmental issues. Many people, even from business and industry, don't seem to realize this. They often ask what banks have to do with the environment. They say that banks should stick to their own business and leave environmental protection up to the experts. But there is a major fallacy behind this logic. Environmental protection has developed such inherent dynamics that no business sector can afford to ignore it. All industries have to review and adjust their corporate policies, production methods, and their products accordingly. This process of change – to which a new dimension was recently added in Germany by the recent *Kreislaufwirtschafts-Gesetz* – creates a new set of winners and losers. For the banks, this involves both new opportunities and new risks. In the following I would like to analyze the risks we are faced with and to look at the strategies with which Deutsche Bank is confronting these risks. One thing is certain at this point: the process has only just begun at most banks, and the goal of a successful environmental management system is still a long way off.

1. WHAT RISKS ARE WE FACED WITH?

In their dealings with corporate customers, banks encounter both direct and indirect environmental risks. Both categories have been dealt with extensively today, so I can skip the basics. Let me just make a few remarks from a German point of view.

Direct risks

Over and above the risk of default direct risks stemming from the acceptance of security in the form of real estate or movable property are governed by a country's legislation. In Germany, for instance, it has

always been the case under police law that both the original polluter and the present owner can be called upon to clean up contaminated ground if there is a threat, say, to the ground water. And there is no shirking this responsibility, even if the property was acquired in good faith.

As a rule, however, this obligation does not extend to banks under German law:

- A bank cannot be held responsible for the decontamination of property that has been pledged to it, nor is this so in the case of compulsory foreclosure, which under German law is carried out by a court. Only when a bank actually purchases collateral property for realization against debt can it be called upon to clean up contaminated ground if necessary. German law is even stricter than U.S. law in this respect: there is no such thing as a "secured lender exemption" in Germany. So banks would be best advised to steer clear of purchases of this kind.
- The concept of a "shadow operator" or "shadow director" has not been taken up in German law. This is probably because - in contrast to British and U.S. law - the administrator in bankruptcy or composition proceedings is appointed by the court and not by the creditors.

Generally speaking, however, there is definitely a growing trend in Germany to have environmental experts carry out a survey of any property that is to be taken in as loan security.

In the case of movable property, German law has a special instrument known as "*Sicherungsübereignung*", a type of chattel mortgage where the lending bank becomes the legal owner of a security, of which the debtor retains possession. The legal implications of this have not been fully examined yet, but it cannot be ruled out that the lending bank may be held responsible for any hazards caused by the said property. So when taking on movable asset collateral under this concept, it is important to keep potential dangers in mind - excessive storage periods or other influences can turn such security into hazardous waste, which is very expensive to properly dispose.

Let me look at another point in this context. There are always people calling for banks to be held responsible for environmental damage caused by their borrowers. It is argued that by extending loans the banks are also responsible for the pollution. These demands, however, are based on two notions I cannot agree with:

- Advocates of such audits seem to be implying that the State is not capable of enforcing its laws, and so needs the help of private bodies or institutions. They are also saying that to force banks to face up to their environmental responsibilities, you have to threaten them with clean-up liability.
- For one thing, I think it's very problematic to bestow virtually sovereign functions on banks.
- And above all, this line of thinking fails to realize that banks need no additional incentives to make them think about risks. Whenever a bank would be called upon to help clean up contaminated ground, it will already have suffered considerable damage through loan default. So banks have every reason to want to include appropriate risk-management considerations in their lending policies.
- Against this background, I think we can safely assume that the idea of suing banks for their borrowers' pollution boils down to people looking for a "deep pocket" they can dip into for clean-up funds.

Indirect risks

To achieve the target of sustainable development, we will have to deal particularly with indirect risks in the medium term.

Indirect risks result from a worsening of the customer's credit-worthiness as a result of the environmental situation. People often tend to think that a bank's risks are limited to its respective lending exposure. The business success of a commercial bank, which operates in numerous fields, depends in a much larger scope on its customers' business success.

That is what the European Community's new "Environmental Management and Audit Scheme" is all about. Banks must be able to assess realistically what ecological influences and trends their corporate customers will be faced with, and what effect this will have on the customer's ability to do business successfully and service loans on time.

McKinsey made this point very clear in a study published in August 1991. There is no stage in the value-added chain of a production process that is not of environmental relevance. Ecological aspects must be borne in mind at all stages, from procuring and processing raw materials, auxiliary materials and fuels, to manufacturing and product utilization, right up to recycling and waste disposal. Risks can crop up at any time and stage of the process, under normal circumstances as well as by accidents. What is more, it is not only a question of dealing with the current situation. In the case of environmental issues, it is essential that we anticipate – to the largest possible extent – what legislation will be coming up next.

2. INTERNAL RISK MANAGEMENT

So much for the background we are up against. The question is: how can a bank best respond to these risks? Deutsche Bank has made ecological criteria part of its internal risk management as well as its product strategy, in order to utilize opportunities and minimize risks. Let me look at our internal risk management first:

Risk scoring sheet

In risk management literature and elsewhere, it is often recommended that we work with environmental checklists. The danger I see here is that the subject is dealt with too superficially. Environmental checklists can limit one's line of sight to the management of direct risks only. Furthermore, environmental protection is an issue that affects every single division of a company and thus needs to be handled in an overall context.

The risk scoring sheet uniformly applied worldwide to our lending has included a section on the

environment for years now; it was revised and extended. In line with its across-the-board impact, the environment issue weaves its way through several positions of the scoring sheet, namely

- security provided
- market position
- management, and
- future perspective.

I have already talked about direct problems on the collateral side, so I think it's time to look at indirect risks stemming from the deterioration of a company's credit-rating for ecological reasons. In our risk scoring sheet, these indirect risks are covered by the three other categories which current management literature might call "soft factors". All of these categories are awarded a certain number of points, which, when added together, give us an indication of a company's credit-worthiness.

The category *market position* can be divided into several sub-section such as business sector, product and service range, or target group orientation, which in turn must be assessed on the basis of numerous criteria.

Ecological questions relating to the business sector are along the lines of:

- Is the market undergoing change through new regulations, the creation of economic incentives or altered consumer behaviour?
- Does the company conduct appropriate planning, and will it be able to react to these new developments?

Questions relating to product/service range might be:

- Does the product range take into account important success factors such as environmental requirements, and does the marketing concept take these into consideration?

- Is the company engaged in systematic R&D work, also with a view to environmental protection?
- Are there ecological risks involved in procurement, production, products or sales?
- Are waste disposal requirements met?
- Are there risks resulting from environmental liability legislation, and if so, are they sufficiently insured?

And, finally, in the target group category: we need to ask whether the company offers problem solution concepts in line with customers' needs, e.g. does the company provide support in recycling and waste disposal, assuming that this is an important success factor?

Creating environmental awareness within a company can only be successful in the long run if an encompassing, overall approach is chosen. This approach must be fully backed by *management*, in other words, environmental protection is a top priority. Here, too, we can differentiate between different fields. In analyzing classic business management aspects, ecological issues should also be considered, such as:

- Does the management set regular targets?
- Are the planning systems transparent and sufficiently connected?
- Are deviations examined on a regular basis?
- Are the company's organization and deputization regulations in line with its business requirements? This is a particularly important point with a view to environmental liability under German law.

Under the heading *future perspective* we attempt to project a number of questions into the future:

- Are the company's investment decisions in line with expected trends and market developments?

- Do the company's products and services satisfy – and possibly enhance – the needs of its target group, and is the company working on improving and expanding its performance?

These questions represent only an excerpt of the most important questions and, of course, putting these thoughts down on paper is not the same as actually implementing them in day-to-day business life. I imagine that all banks have a lot of training work to do here. It would be an illusion, however, to think that we can turn our corporate account officers into full-fledged environmental experts with all the technical and scientific know-how involved. Any kind of training we conduct can at best aim to increase our account officers' sensitivity to prompt them to incorporate ecological considerations in their decisions.

Workshop on “Environmental, Fire and Building Risks”

Together with an environmental consultancy, we have designed a one-day workshop under the heading “Environmental, Fire and Building Risks” in which risks in lending and credit control are dealt with on the basis of a case study. Some of the topics covered in the workshop are:

- the basics of environmental legislation
- an example of an environmental liability situation
- documentation and disclosure requirements
- company policy and safety regulations as part of the security organization
- authorization procedures and examples of consequences based on case studies
- environmental hazards caused through operations or a product
- safety and fire prevention standards.

Training and professional development

Special seminars held on a certain subject always have something disconnected and theoretical about them. It is important that a link be established with the instruments used in day-to-day business. We are revising our entire training programme right now to, among other things, also strengthen the role environmental issues play in credit training. Recently, for instance, we decided to use a case study from the food industry as the basis for a one-week seminar and incorporate environmental features.

EC ecological audit

Risk scoring sheets and training alone are not enough to solve the problem. Let me point out that there is a major difference between commercial banks' operations and those of, say, the World Bank, the EBRD or similar institutions. A large part of our business consists of numerous small and medium-sized transactions.

- Commercial banks would have to set up gigantic departments for environmental affairs if they were to carry ecological customer audits themselves - of whatever scope. This is not the right approach, as one Idok at a balance sheet for commercial law purposes shows. Everyone agrees that the balance sheet is established by the company and certified by a public accountant. Banks are obliged to examine these balance sheets and to take them into account in their lending decisions.
- It is also not the right approach for each bank to draw up its own questionnaire which customers are supposed to answer. Customers will not accept the idea of a checklist until a uniform standard has been created.
- So a commercial bank cannot operate on a case-by-case basis except in project finance and similar situations. We are therefore very much interested in the efforts to create a uniform standard along the lines of the European Community's Environmental Management and Audit Scheme due to come into force soon. Details of the audit

have not been determined yet; we think it will be essential to include internationally recognized criteria and to make sure that the time and expense that would be involved for small and medium-sized companies is not excessive.

3. Risk management with regard to customers

In shaping our lending portfolio we try to increase our involvement with “clean companies”. To accomplish environmental credit risk management, however, I think we should take a more active approach by bringing our customers’ attention to products which can help them manage the opportunities and risks resulting from environmental protection. As I said before, a bank’s success depends on its customers’ success. Historically speaking, that was the starting point of our activities. So we have come up with an environmental support system entitled “db-Corporate-Service: Environmental Protection” to assist our corporate customers during the information and decision phase and later on the investment phase, too. We want the value-added chain to be as long as possible. This service includes database searches regarding products and manufacturers of environmental technology, relevant public promotion schemes, and also custom-tailored financial solutions. In closing, I would like to pick out two of the services we offer:

Workshop on “Environmental Management and Information”

As I said before, environmental protection has to be a top priority of management. We hold management workshops in our branches and invite speakers from environmental consulting firms to talk about ways in which companies can protect themselves against environmental risks by means of strategic management, and how they can turn environmental protection into a success factor. Points discussed here include:

- Germany’s Environmental Information Act, new EU directives and the field of environmental liability legislation
- companies’ scope for action, e.g. communication policy, cooperation with government authorities

and building up an integrated environmental management system

- environmental product assessment and ecologically acceptable production methods
- risk analysis, risk provision and business management security
- damage prevention strategy for product and production site risks
- reducing the risk potential by setting up an environmental safety organization or conducting an ecological audit.

Checklist on the environmental risk situation

I’m sure many of you know how difficult it is to convince companies of the merits of an environmental audit. Their reluctance is quite easy to understand, because they are being asked to spend a lot of money on something where the best possible outcome is for nothing at all to happen. In many cases, however, an audit reveals that money needs to be spent on environmental improvements, so that in the short run it is cheaper to ignore the problems than to tackle them. We have come up with an easy-to-handle checklist on the environmental risk situation in an attempt to acquaint small and medium-sized manufacturers with the issue at little cost to them. This checklist was drawn up by an environmental consulting firm, and for a fee the same firm carries out an EDP-supported evaluation. This evaluation is, of course, strictly confidential and goes directly to the company concerned. So far we have received a satisfactory response from companies that have commissioned such environmental surveys. But we must remember, of course, that this approach, for which we have launched several newspaper ads, is only a very first step.

We will need a whole range of instruments to help us set up a coordinated environmental credit risk management system. This forum certainly provides a good and welcome opportunity to exchange views and hear what other banks are doing in this respect.

Letitia Lowe Oliveira
 Environmental Specialist
 International Finance Corporation

Environmental Risk Management for Financial Institutions

WORKSHOP OBJECTIVES

DEMONSTRATE:

- What an environmental risk management system involves
- Why it is worth implementing
- How to implement it

ENVIRONMENTAL RISK

- Risk to the natural environment
- Risk to the company
- Risk to the financial institution

RISKS TO THE NATURAL ENVIRONMENT

- Special concerns
- Major hazards
- Contamination of site
- Violation of national/local environmental regulations

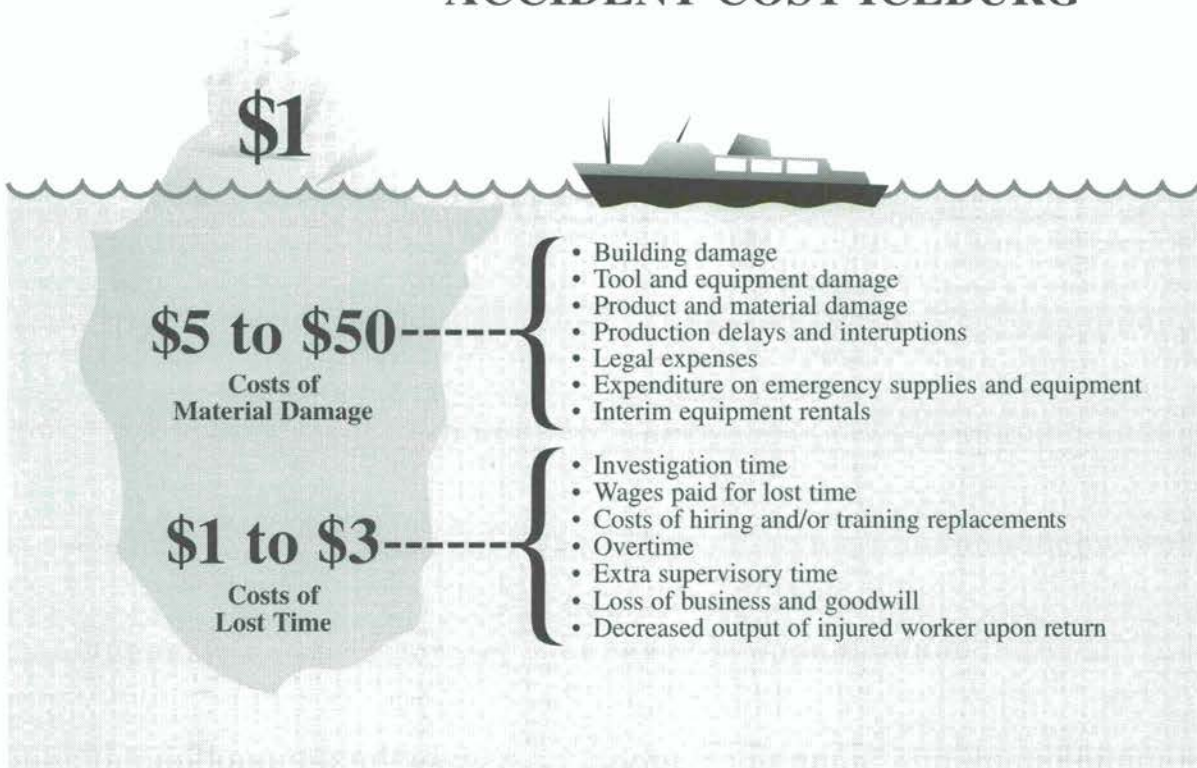
RISKS TO THE COMPANY

- Rejection or delay of contracts and permits
- Plant closure, down time for retrofitting
- Civil and criminal liability, including remediation costs
- Increased cost of and reduced access to capital

RISKS TO THE FINANCIAL INSTITUTION

- Credit risk: delayed payment or write-off of interest and principal
- Position risk: devaluation of company's securities
- Security risk: defunct or devalued land-based collateral
- Legal risk: civil and criminal liability through exercise of control
- Funding risk: reduced access to and increased cost of capital

ACCIDENT COST ICEBURG



**ENVIRONMENTAL RISKS:
WRONG RESPONSES**

- Overestimate risk: reject investments with acceptable risks
- Underestimate risk: approve investments with unacceptable risks

RISK ASSESSMENT:

- Assess risk to environment
- Assess risk to company
- Assess whether investment is acceptable

RISK MANAGEMENT:

- reject investments
- make them acceptable
- accept them

**BENEFITS OF ENVIRONMENTAL RISK
MANAGEMENT TO THE COMPANY**

- Improved financing and cofinancing opportunities
- Increased coverage and lower premiums for insurance
- Increased sales (environmental consumerism and investment)
- Reduced energy/raw material input and waste disposal costs

**BENEFITS OF ENVIRONMENTAL RISK
MANAGEMENT TO THE FINANCIAL
INSTITUTION**

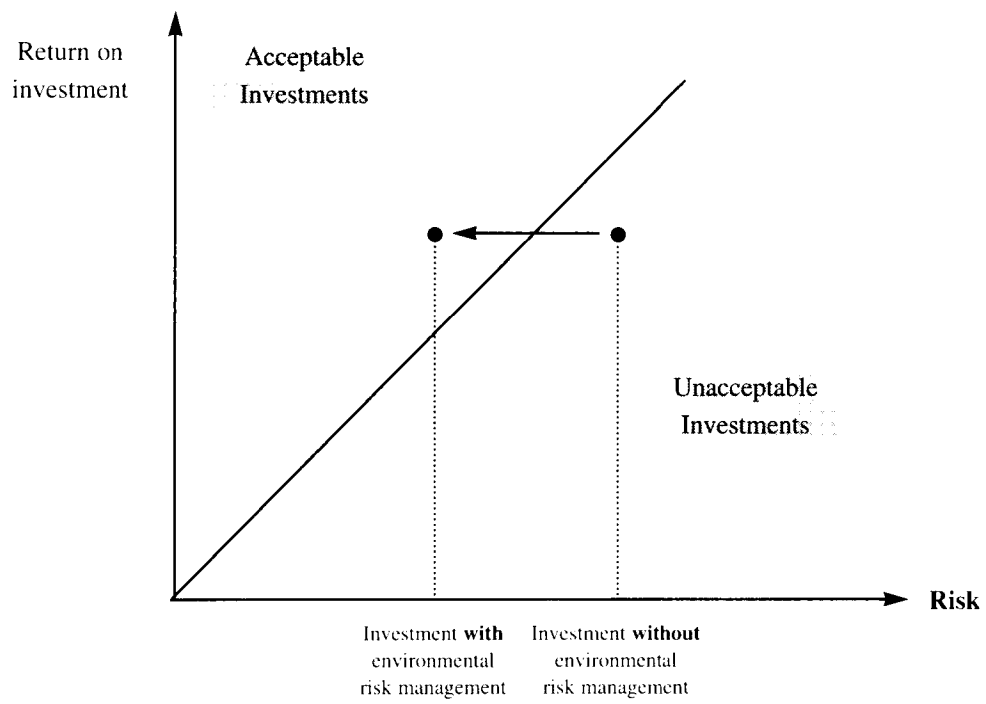
- Risk management permits competitive loan pricing
- Opportunities for consultancy services
- Internal efficiency
- Marketing opportunities for green financial products

TRANSACTION SCREEN

Environmental Risk	FI Response			
	Environmental Audit		Major Hazard Assessment	Full/ Partial EA
	Site Assessment	Compliance Evaluation		
Category A project				
Special concerns				X
Major hazard				X
Non-compliance with national/ local regulation			X	
Site Contamination	X			

EA = Environmental Assessment (contact IFC first)

FIGURE 1 ENVIRONMENTAL RISK MANAGEMENT





DAY ONE

PANEL DISCUSSION:

**“PAST LESSONS, EMERGING MARKETS:
CLEANING-UP THE MESS,
NOT MESSING UP THE CLEAN-UP”**

“PAST LESSONS, EMERGING MARKETS: CLEANING-UP THE MESS, NOT MESSING UP THE CLEAN-UP

ENVIRONMENTAL REGULATIONS IN HUNGARY

Dr Katalin Forgacs

INTRODUCTION : GENERAL OVERVIEW

The purpose of this paper is to give the reader a general overview about special regulations that are designed to serve the protection of the environment in Hungary.

This paper is organized as follows.

1. The most important legislative and jurisdictional regulations, setting standards, charges, punitive fines on polluters will be summarized.
2. The institutional framework of the Hungarian environmental protection.

The reader must be warned, however, that the sections below will make him familiar only with the “surface” of environmental issues in Hungary. Hungary has been in a very complex transitional period for the last few years, while there is no doubt that public awareness has become much more focused and developed with respect to the environment. Yet the major actors of the economy are still very far from committing themselves to the promotion of sustainable and environmentally sound economic development. As it is demonstrated in the first section, the government has tried to provide the right signals to individuals and businesses and to promote behavioural changes in favour of effective environmental management by setting standards and punitive fines.

The major actors in the economy, have, however, been following this trend only reluctantly and have been able to find the loopholes in the jurisdiction whenever possible. It is still wishful thinking that sound environmental behaviour should form an integral part of normal business practices. This is so

because of two reasons. First, in the state owned sector (all the major power plants and oil refineries are still owned by the state) old behavioural patterns of the “Bargaining Society” still prevail. Here we refer to the study “Environmental Protection in a Bargaining Society”, attached. In summary it is still a common practice in these companies that the degree of emission, the size of fines and also possible concessions are determined in the framework of a series of negotiations held every few years with the relevant authorities. These companies are usually important employers in certain areas, and their output prices are still determined by the state.

Therefore it is really difficult to argue how these companies should or could pay higher punitive fines. In the emerging private sector, on the other hand a different bargaining position can be traced. In many cases private entrepreneurs will try to bribe local environmental inspectorates to shut one eye. (As we will see in section 2., regional, local environmental authorities are the real advisory and controlling arms of the administrative organisation of Hungarian environmental protection) We cannot tell to what extent these efforts are successful but they fit only too well in the general picture where corruption and tax evasion are commonplace among private entrepreneurs and state bureaucracy.

A positive development in this respect has been brought about, however, by the privatisation process and by some credit facilities extended from foreign banks, such as the Japanese Eximbank and the EBRD. As to privatisation, an environmental audit is usually necessary where a project involves the acquisition of a fixed asset. Under Hungarian legislation the new owner of the asset is responsible for environmental liabilities unless it is demonstrated at the time of the transaction that the liabilities were incurred prior to privatisation (i.e. this fact can be reflected in the price paid for the fixed asset in question). Therefore, it is becoming more and more frequent that the potential buyer of any asset insists on a due diligence screening and part of that screening is the evaluation of potential environmental liabilities.

Environmental liabilities and investment

An investor has to be aware of two types of potential environmental liability when making an investment in Hungary.

- Liabilities arising from past environmental pollution caused by the operation of Hungarian state enterprises. These liabilities can encompass pollution at the site of the enterprise, contamination migrating from off-site landfills used by the enterprise and damage claims of employees and nearby residents.
- Liabilities associated with the current operations of a facility by the investor. These liabilities can encompass violations of law relating to permitting and related issues and liability for environmental damage under civil and criminal statutes.

No environmental standards are in force which specifically trigger an obligation to clean up contaminated sites. In practice, Regional Environmental Inspectorates have broad discretion regarding the method of remediation to be adopted.

LIABILITIES FROM POST ENVIRONMENTAL POLLUTION

The recent *Privatisation Laws* govern the privatisation process in Hungary. Section 35(2) of *Act No. LIV of 1992* states that the transformation plan of a state-owned enterprise must include a provision on how environmental damages caused by the operation of the former state enterprise will be apportioned. Prior to its privatisation, a state enterprise must be "corporatised" into either a joint stock or a limited liability company. The former state enterprise's obligations do not cease to exist with its transformation into corporate form. During this transformation process parts of the enterprise, which are not corporatised may be sold as assets. Assets may be acquired without assuming the liabilities of the former state enterprise, unless there is a sale of all or substantially all of the assets of the former state enterprise.

The principal legislation governing forms of foreign investment is *Act XXIV of 1988 Regarding*

Investments by Foreign Persons in Hungary as amended ('*Foreign Investment Law*'). The *Foreign Investment Law* contains no specific provision regarding environmental liability.

The transfer of property sections of the *Civil Code* and *Act No. LV of 1992* provide for a general transfer of liabilities upon the transformation or sale of an enterprise to a purchaser corporation, unless the transaction is structured as an asset purchase or the contract provides otherwise.

The *Draft Environmental Law* does not contain any provisions relating to the liability of new owners of former state enterprises for pollution arising from its past operations.

In principle, environmental indemnification can be obtained by investors on a case-by-case basis to the extent that under Hungarian law contracting parties are free to agree on the specific terms of their agreement.

In practice, the SPA has recently agreed to indemnify a number of investors for liabilities arising from past pollution. The SPA issued a written statement to a meeting of environmental experts on 23 October, 1992, stating that in the case of known environmental pollution, the SPA can either:

- Deduct the cost of clean-up from the purchase price, based on the estimated cost to remediate the past pollution, or
- Provide an indemnification for the past pollution.

It appears that the SPA's current indemnification policy is limited to the reimbursement of site clean-up costs. The SPA will generally pay such costs only if the pollution is discovered within three to five years after the closing of the transaction.

Under Paragraph 17 of *Act No. LIV of 1992*, the SPA must obtain approval of the Minister of Finance prior to any decision resulting in the SPA's assumption of any responsibility for a guarantee, security or warranty. Under a new policy announced on 10

December 1992 the SPA will have the discretion to indemnify investors for up to 500 million HUF.

The draft Environmental Law does not contain any provision relating to the government's indemnification of investors for past environmental liabilities

LIABILITIES FROM CURRENT FACILITY OPERATIONS

Types of Administrative Liability

Administrative liability arises in the event of violations of environmental permits, statutes, regulations and other legal requirements.

There are two types of administrative remedies: fines and administrative orders.

Fines

The most frequently used administrative sanction is the environmental fine. Under the *Environmental Protection Act* all persons who pursue activities contrary to statutory provisions and official orders which serve to protect the environment, or fail to meet obligations prescribed thereunder, are subject to fines.

Fines are imposed for violations of regulations in the following areas:

- Land protection;
- Water pollution;
- Sewage treatment;
- Air pollution;
- Nature conservation;
- Hazardous waste;
- Noise or vibration.

Fines are calculated based on the extent of the pollution and danger to human health and the environment. In practice, the policy of levying fines has not been an effective deterrent. The fines collected are not close to the actual cost of remediating the environmental damage, as in many cases the full extent of damage remains undetected. Also, as industrial production has dropped in

Hungary following the loss of export markets to the former Soviet Union and the CEE countries, the total amount of environmental fines levied has shrunk from HUF 400-500 million to HUF 200- 300 million in 1992.

If a fine is paid, the polluter may still be subject to criminal, civil or other administrative penalties.

The imposition of a fine requires no proof of fault or negligence, except in the case of land protection fines.

The draft Environmental Law provides a general authorisation for the imposition of fines

Administrative orders

Administrative remedies may include the following:

- Closure, suspension or cessation of an activity;
- Limitation of some aspect of an activity, such as the use of an energy source;
- Limitation of the distribution of products;
- Halting the importation of goods;
- Withdrawal or suspension of a permit

Since 1989, the law provides for judicial review of administrative decisions.

As to facilities extended by some foreign banks to Hungarian financial intermediates, it is a precondition for the disbursement of such facilities that Hungarian banks develop environmental procedures to ensure that their customers comply with all applicable local and national regulations. As far as these facilities are concerned Hungarian banks are supposed to make sure that environmental risks are included in the normal checklist of credit risk assessment and management; therefore, environmental impact assessments are conducted whenever it is deemed necessary by the bank. The EBRD has even issued a brochure for this purpose titled: "The EBRD, FI-Intermediated Investment and the Environment."

PART ONE: THE LEGISLATIVE FRAMEWORK

Persistent legislative activities started in Hungarian environmental protection in the mid seventies when the first Act on the Protection of the Human Environment was passed in 1976. This was the first comprehensive law of its kind. The Act stipulates provisions of protection with a general character covering the following areas:

- earth
- water
- air
- flora and fauna
- landscape
- settlement surroundings

The need for drafting a new, modern legislation on the protection of the environment has long been on the agenda but has not reached completion yet. Therefore, unfortunately, currently prevailing environmental regulation is scattered in numerous decrees and acts issued by various ministries and authorities and is very difficult to follow.

Various aspects of environmental protection have been regulated, on the one hand, by the Ministry for Environmental protection, and, by various other related ministries on the other hand, while there are still some decrees in force which were enacted by the predecessors of such ministries, often under different names. We face therefore a situation where environment-related provisions can be found in legislations passed for example, in mining, agriculture, architecture, and also in laws regulating public health and epidemiological issues.

The oldest regulations are those covering air (1973) and water (1964, 1978, 1984).

Ecologists have determined pollution ambient limits for both air and water in the major regions and live watercourses considered as ecological units.

These ambient standards must be distinguished from effluent standards. The latter relate to what comes out of a pipe or a stack while the former relate to the

environmental medium itself and are usually expressed in concentrations. Thus, the most important watercourses of the country have been classified into 6 categories while standards for air have been fixed for 3 categories. The norms stipulate the milligramm/litre versus milligramm/cubic meter limits for the most dangerous pollutants.

AIR

The whole country was surveyed in the course of determining the norms of air quality. The degree of basic air contamination caused by seven critical polluting materials was determined, that is the milligramme/m³ ratio of each of these materials. The next step was to determine district-by-district the possible further degree of pollution, which would not yet endanger the environment. On the basis of these norms, individual limits were then determined in respect of major industrial pollutants: the quantity of permissible emission of various materials was given an upper limit. When these limits are exceeded, a fine must be paid according to the number of hours and the excess kilogrammes of the polluting material. The fines are paid into the National Environmental Protection Fund, which uses them for assisting environment protection projects of various enterprises.

The more recent regulation on the protection of air quality is the Council of Ministers' decree No. 2 of 1986. Essential features of the decree may be summarized as follows;

Regions of the country have been classified as

- intensively protected, or,
- protected.

Local municipalities have to decide, after consultation! with the local environmental protection authority, to which category they wish to be classified into. In the protected areas ambient standards are more loose and therefore, effluent limits can also be less strict.

A second new feature of the new regulation is that prior to any new investment, an environmental

licence must be obtained from the competent environmental protection authority. The office will then set effluent limits for the applicant. In the process of authorisation, the investor is obliged to certify, and the protection authority is obliged to check whether the planned technological solution is in compliance with the air protection regulations.

Agencies responsible for implementation:

It is the responsibility of the Minister for Public Health to define

- the list of air polluting substances,
- the final marginal ambient standards, over which there exists a direct danger to public health,
- the rules and procedures as to how to measure air pollution.

It is the duty of the Minister for Environmental Protection to define

- the rules and procedures as to how to establish the various categories of air protection,
- the rules governing the application of regional ambient standards,
- technological effluent standards,
- the rules and procedures as to how to measure individual emissions.

WATER

As to water protection, the relevant regulations were issued in 1964, 1978 and modified by new and substantially stricter measures in 1984. The catchment areas of the country were classified in six categories. The permissible level of nineteen pollutants and thirteen poisonous materials was in turn specified by milligramme per litre of waste water in each of the categories. Should the waste waters discharged contain a higher concentration of such materials than permitted, a fine would be

imposed commensurate with the excess quantity of pollutants and multiplied or reduced according to a number of modifying factors. The decree issued in 1984 is substantially stricter than the earlier one with respect marginal values as well as the size of fines. As the years pass, offending plants which violate the regulations will be fined increasingly more progressively. The system of marginal values and fines concerning materials damaging public drains was constructed on the basis of a similar pattern.

Noteworthy parts of the Act are as follows (Government Decree 32/1964 13th December):

- Any kind of substance can be conducted (directly or indirectly) into the water bed only with the license of the water management authority and by observing its regulations. It is prohibited to contaminate, or harmfully pollute waters, or to change their physical, chemical, and biological properties, or to alter their natural qualities and self-purification capacity in a disadvantageous way.
- Industrial plants causing water pollution or contamination may only be constructed and operated provided they install a refuse water purifying equipment.
- In case of water contamination or pollution (or in case of a threat of these), the water management authority has the right to forbid or limit the harmful activity, or in extremely harmful cases, it may suspend the operation of the plant.
- Plants contaminating and harmfully polluting waters will be obliged to pay a *refuse water fine*; while those damaging the sewage conducting and purifying works by conducting contaminating substances into the system will be obliged to pay a *sewage fine*. On how to estimate the rate of contamination and the fine to be paid, rules of the National Water Management Office decree, 3/1984. (7th February) are in effect. On site investigations to determine the rate of fine to be paid are carried out by the Environment Protection and water Management Board, on a regular basis. On sewage fine, the National Water Management

Office decree, 4/1 984. (7th February) is in effect. In this case, investigations are carried out by the public utility company operating the sewage works.

- A Water management license is to be requested in the case of all water-related work, construction, renovation or when making use of water facilities, or in any case water is used (operation license). This license is to be requested by the constructor (investor) from the water management authority.

In the case of work, or construction not linked to this kind of license, but with an impact on water quality, the competent authority may issue a permit with the approval of the water management authority.

Organization of water management; regulated by the 4;1990. (24th October) decree of the Ministry of Transport, Communication and Water Management.

- a.) Ministry of Transport, Communication and Water Management.
- b.) National Water Management Agency (operation control, secondary agency in water management state administrative matters).
- c.) Water Management Offices

They have primary competent authority rights, and are responsible for district/regional tasks.

HAZARDOUS WASTES

1.) The supervision of hazardous wastes' production and activities aimed at waste disposal is regulated by the 56/1981. (18th November) Council of Ministers' decree.

The supplement of the decree gives the definition of hazardous wastes and their category of dangerousness. Newly discovered wastes not enlisted in the decree should be considered hazardous until analysis is carried out.

- When hazardous wastes are treated, their penetration into the soil, water or air must be prevented.

Any activity resulting in the production of hazardous wastes can be launched only with the approval of the primary environment protection and health authority. Within 60 days after starting such activities, a primary report has to be submitted to the environment protection authority. A detailed annual report on changes must be submitted until 31st March each year.

- Hazardous wastes are to be stored in special storage facilities.

For any treatment license of the environment protection authority must be obtained.

This license will be issued by the environment protection authority with consideration to the opinion of the public health authority. Contractors for waste disposal can be employed but it is the responsibility of the producer to make sure that the contractor has the necessary licences.

The environment protection authority may oblige the producer/manufacturer to appropriately operate his equipment or facilities involved in treatment, to appropriately treat wastes in his possession, to submit reports, and to prepare or supplement recording.

The environment protection authority may ordain the limitation of the activity or the suspension of plant or machinery operation producing hazardous wastes in case the producer fails to observe his obligations, which presents a direct threat to human environment and health in the opinion of the competent authorities.

In case of a direct and extreme threat of contaminating the environment by hazardous wastes, the competent environment protection authority may ordain the termination of the activity on the site, and may issue a resolution with this content and immediate effect.

License to accept hazardous wastes for treatment may be issued by the environment protection

- authority with consideration to the opinion of the State Public Health and State Medical Officer' - Service.

The list of those having the right to accept hazardous wastes for treatment will be published In the environmental Protection and Architectural Bulletin on an annual basis.

The regionally competent environment protection authority will impose a fine on those who violate the regulations of the treatment of hazardous wastes.

The sum of the fine, and the way of computation is ruled by the 2/1993. (9th February) Ministry or Environmental Protection and Regional Policy decree.

STORAGE OF CHEMICAL SUBSTANCES

1. On issues concerning toxic substances' treatment - as well as storage - the 16/1985. (11th May) Council of Ministers decree rules.

- Definition of toxic substances will be carried out by the State Public Health and Epidemiological Office upon the request of the manufacturer or distributor. A competent branch of the State 12

Public Health and Epidemiological Office may ordain that this request be submitted. The State Office will issue a certificate about the testing.

Toxic substances may be traded only if the producer, manufacturer, and processor possess a licence issued by the State Public Health and Epidemiological Office. This applies to trading companies as well.

On behalf of the population, no special license is required to purchase and use toxic substances.

2. The Gas Act of 7/1969 rules that in case of establishment, taking into use or enlargement of gas, petroleum and petroleum product store, the operator or investor is obliged to request a license.

3. On plant protection the Act 2/1988 rules.

The Act stipulates that the responsibility of plant protection is carried out under the supervision of the Ministry of Agriculture. The relevant regional authorities are the plant health and soil conservation inspectorates of the counties.

- Strict regulations concerning the package, transportation and application of herbicides are to be fully observed. These products can be traded with licenses only, which will be issued by the Ministry of Agriculture with consideration to the opinion issued by the Ministry of Public Health and the Ministry of Environment and Regional Policy.

The license can be either of a restricted type (to three years at a max.) or of a general type (valid for 10 years at max, and prolongable for another 10 years).

When product properties are changed, an application for the amendment of license is to be submitted.

The Ministry has the right to terminate the trading of the license-bound product at any time, fully, or in part, if harmful or not appropriate features of the product come to light after the license has been issued. On account of their dangerousness, herbicides are classified as category I, II, an III. Herbicides of category I (“extremely toxic substances”) cannot be sold in retail trade, or applied in inner municipal and resort areas or within 200 m’s distance of dwelling houses or animals’ stales. Contaminated or forbidden herbicides and their packages qualify as hazardous wastes.

PROTECTION AGAINST NOISE AND VIBRATION

Prominent items of the regulation are specified by the 12/1983. Council of Ministers’ decree, which defines the notion of harmful noise and vibration; that is, any noise or vibration is to be considered harmful in case it exceeds the noise and vibration, and emission limit values specified by the 4/1984. (23rd January) Health Minister decree, or in case such limit value cannot be stipulated due to the nature of the noise, but perception proves that it is greatly disturbing people’s rest.

- In case of carrying out activities or construction of establishment producing noise, the constructor is obliged to request the environment protection authorities to define noise emission limit values, and to secure its observance.

- The environmental protection authority is entitled to define a noise emission limit value for operating plants and may define the deadline of fulfillment. In case it is not observed, and failing to do so exposes the environment to a direct threat, the office has the right to order the limitation or suspension of the activity producing direct threat, respectively.
- All changes in noise emission must be reported to the environment protection authority within 30 days.
- Certain areas may be declared intensively protected areas against noise by local government decree (after acquiring the official opinion of the public health and environment protection authorities).
- In matters concerning protection against noise and vibration, primary environment protection authority rights are exercised by
 - the mayor, or notary public in case of new, and operating servicing plants/establishments;
 - the competent nature protection office of the region in case of other industrial establishments.

Temporary Provisions

Until a new comprehensive legislation on environmental protection is passed, the Government Decree No. 86; 1993. (4th April) is in effect on issues concerning environmental screening.

The decree stipulates that an environmental impact analysis must be carried out in case of activities having a significant impact on the environment.

Environmental analysis consists of two phases;

- Initial screening (documentation; preliminary environmental impact assessment)
- detailed analysis (documentation; detailed environmental impact assessment).

Preliminary environmental impact assessment is obligatory in cases defined by the decree. In other

cases it is dependent on the decision of the local environmental protection office.

An environmental assessment is an environmental study conducted to identify, predict and evaluate the environmental impacts which may arise from new development, including the extensions to existing facilities.

The study must be submitted to the local environmental protection authority. The office will make a decision on the basis of the preliminary analysis (also seeking the advice of agencies interested in the question), and may

1. issue the required license,
2. or may reject the request,
3. or may ordain a detailed environmental effect analysis to be submitted specifying the circle of questions and circumstances to be studied.

A detailed environmental assessment should include the following;

- detailed description (documentation) of the preliminary environmental assessment's results - specification of areas to be exposed (map demonstration), and description of base condition of areas in question.
- a forecast of environmental changes to take place due to the activity, as well as their evaluation and a description of environmental health, economic, and social consequences.
- definition of measures to prevent, decrease or eliminate potential contamination and damages.
- A mitigation plan.
- list, sources and availability of documentation used for making the study.
- a clear summary.

In case the environmental protection office insists on a detailed environmental assessment, public consultation on the project will be compulsory.

Following public discussion, decision will be made which may involve the rejection of the request, or the issuing of the required environment protection license.

Sources of legislation relating to environmental liability

- *Act No. III of 1952 on Civil Procedure;*
- *Act No. IV of 1957 on Administrative Procedure;*
- *Civil Code, Act No. IV of 1959;*
- *Act No. II of 1976 on Protection of the Human Environment;*
- *Criminal Code, Act No. IV 1978;*
- *Act XXIV of 1988 on Investments by Foreign Persons in Hungary;*
- *Act No. LIII of 1992 on the Management and Utilisation of Entrepreneurial Assets Permanently Remaining in State Ownership;*
- *Act No. LIV of 1992 on the Sale, Utilisation and Protection of Assets Temporarily Owned by the State;*
- *Act No. LV of 1992 on the Amendment of Legal Rules in Connection with Acts Concerning Entrepreneurial Property of the State;*
- Draft Environmental Law.

Part Two: The institutional framework

THE MINISTER AND THE MINISTRY

The sphere of responsibilities of the Minister for Environmental Protection* has been defined in detail by the Government Decree No. 43/1990. (15th Sept.)

The Minister carries out his responsibilities by the help of so called agencies, partly operating as structural units of the Ministry.

The offices operating as structural units of the Ministry - supervised by deputy under-secretaries - are as follows:

- National Environmental Protection Agency
- National Agency for Nature Conservation
- National Agency for Regional Development
- National Agency for Building
- National Inspectorate for Environmental Protection (with Regional Inspectorates)

In fulfilling the task of coordinating the work of the different branches, the Minister is also assisted by the Hungarian Meteorological Service, the National Agency for Historic Monuments, and the Institute for Environmental Management.

These latter bodies function in their advising and consulting capacity to the Minister.

The Minister acts as chairman of the above Agencies. Members of the Agencies are persons of position of high authority appointed by the ministers of related ministries, or experts from other fields appointed by the Minister, Certain tasks of the Minister are carried out through regional organizations.

The National Inspectorate for Environmental Protection and the subordinated Regional Inspectorates

The National Inspectorate for Environmental protection acts as the highest forum in environmental issues. It has a direct supervision over the Regional Inspectorates. This means that they play a decisive role in the following areas:

- protection against air pollution,

- protection of water quality,
- protection of water quantity,
- protection against hazardous wastes,
- protection against noise and vibration, and
- protection against radiation.

The sphere of authority of the Regional Inspectorates covers the following fields. Hazardous Wastes

The Inspectorates

1. – may oblige any producer to submit an application for the testing of newly discovered wastes. 56/1981. (18th Nov.) Council of Ministers' Decree, §2., article (3).
 2. – May give permission for launching activities related to harmful waste in regions under national nature protection. 56/1981. (18th Nov.) Council of Ministers' Decree, §4.
 3. – May lift bans and give permissions to dilute harmful wastes in water, 56/1981. (18th Nov.) Council of Ministers' Decree, §8, article (1).
 4. – May give permissions for the disposal of hazardous wastes on the site of storage or disposal. 56/1981. (18th Nov.) Council of Ministers' Decree, §10, article (2).
 5. – May give licences for the disposal of hazardous wastes 56/1981. (18th Nov.) C. of M. Decree, §10, article (3).
 6. – May give preliminary approval to install equipments for the treatment of hazardous wastes and to establish new sites of disposal. 56/1981. (18th Nov.) C. of M. Decree, §11, article (1).
 7. – define way and duration of storage, as well as the way of collection, preliminary treatment and treatment of hazardous waste to less hazardous. 56/1981. (18th Nov.) C. of M. Decree, §13, article (1).
 8. – may oblige the producers to secure the appropriate operation of the equipment treating hazardous wastes. 56/1981. (18th Nov.) C. of M. Decree, §13, article (1).
 9. – may issue decrees limiting activities, or suspending the operation of a plant, factory, or machinery, that produce hazardous wastes. 56/1981. (18th Nov.) C. of M. Decree, §13, article (2).
 10. – in case of direct and grave danger of environmental pollution by hazardous wastes the regional Inspectorate will enact the suspension of activity producing harmful wastes. 56/1981. (18th Nov.) C. of M. Decree, §13, article (3).
 11. – Regional Inspectorates may also lift the restrictions concerning hazardous wastes. 56/1981. (18th Nov.) C. of M. Decree, §13, article (4).
 12. – in case of break-downs of operation or other extraordinary events the Inspectorate will define the tasks to be done in order to eliminate environmental pollution. 56/1981. (18th Nov.) C. of M. Decree, §14, article (2).
- the inspectorates will also
13. – oblige the producers to pay hazardous waste fine. 56/1981. (18th Nov.) C. of M. Decree, §15, article (1).
 14. – they are also entitled to give preliminary permission to import waste material from abroad. 55/1987. (30th Sept.) C. of M. Decree, §1, article (2).
 15. – will impose fine in case of import of waste substance without permission, or in case of import or use different than defined in the permission. 55/1987. (30th Oct.) C. of M. Decree, §3, article (1).
 16. – In case of import of waste matter without permission, the Inspectorate will order to restore the original status quo, 55/1987. (30th Oct.) C. of M. Decree, §3, article (4).
 17. – In case of import of waste matter without permission, the office will order expert investigation to be done. 55/1987. (30th Oct.) C. of M. Decree, §3, article (5).

Noise

18. – the regional inspectorates will define the limit value of noise emission when a new industrial plant is established, put into operation, renovated, enlarged, modernized, or large scale construction works have been done.

12/1983. (12th May) C. of M. Decree, §1, article (2).

19. – They will also order to install noise and vibration decreasing appliances in case of establishing new road - and rail lines and passenger airports, and in case of renovation and modernization bringing about essential and permanent change in transportation.

12/1983. (12th May) C. of M. Decree, §10, article (3).

20. – will define the limit value of noise emission for industrial plants.

12/1983. (12th May) C. of M. Decree, §12, article (1).

21. – In case a drastic change has been reported after the noise limit of an industrial plant had been defined, a new limit value of noise emission will be defined by the local inspectorate.

12/1983. (12th May) C. of M. Decree, §13, article (2).

22. – will limit or suspend activities of the industrial plant producing harmful noise or vibration.

12/1983. (12th May) C. of M. Decree, §15, article (1).

23. – may lift the restriction or suspension of activity in industrial plants generating damaging noise or vibration.

12/1983. (12th May) C. of M. Decree, §15, article (2).

24. – may impose noise and vibration fines on industrial plants

12/1983. (12th May) C. of M. Decree, §21.

Air

25. – The regional inspectorates will define emission limits for newly established plants generating air pollution

21/1986. (2nd June) C. of M. Decree, §4, articles: 2-3

26. – will re-define emission limit values when the

air-polluting plant changes technology. 21/1986. (2nd June) C. of M. Decree, §4, articles: (2)-(3)

27. – may impose a limit value below the average emission limit value of a given region in case of a new, air-polluting plant

21/1986. (2nd June) C. of M. Decree, §4, article (4).

28. – will define the emission limits for plants already in operation

21/1986. (2nd June) C. of M. Decree, §5, article (1) a.)

29. – will oblige the operator of an operating air-polluting plant to install a ventilator-purifier system.

21/1986. (2nd June) C. of M. Decree, §5, article 1. b.).

30. – may impose stricter emission limits for plants than the average emission limit for a given region

21/1986. (2nd June) C. of M. Decree, §5, article 2.

31. – may oblige the operator of an operating plant to modernize technology or to take other measures.

21/1986. (2nd June) C. of M. Decree, §5, article (1) b.).

32. – In case of a probability or event of a damaging air pollution requiring extraordinary - or immediate - measures, the inspectorate may oblige the operators to use a different fuel/energy resource.

21/1986. (2nd June) C. of M. Decree, §8, article (1) a.)

33. – In case of a probability or event of a damaging air pollution requiring extraordinary - or immediate - measures in the region exposed to danger, the inspectorate may oblige the operators to temporarily limit their activities causing air pollution.

21/1986. (2nd June) C. of M. Decree, §8, article (1) a.).

34. – In case of a probability or event of a damaging air pollution requiring extraordinary - or immediate - measures in the region exposed to danger, the inspectorate may oblige the operators to temporarily suspend their activities.

21/1986. (2nd June) C. of M. Decree, §8, article (1) a.).

35. – They may also postulate the limitation or suspension of activities of air polluting plants

21/1986. (2nd June) C. of M. Decree, §9, article (1).

36. – the inspectorates are also entitled to define fines to be paid by air polluting plants 21/1986. (2nd June) C. of M. Decree, §10, article (1)

37. – may give permission for the open-air burning of industrial wastes.
4/1986. (2nd June) National Environment and Nature Protection Office (OKTH) decree, §6, article (1).

38. – may give permission for burning industrial wastes in traditional energy generating equipments
4/1986. (2nd June) OKTH decree, §6, article (1).

Water

39. - In case it is not the competitive authority of any other agency, the local water management authority will define - by way of individual administrative decision - the ways and conditions of sewage water disposal.
1964. Law No. 4. § 41, article (1)

40. - They may modify, suspend or withdraw the permission specifying the conditions of sewage - water disposal not being part of the competitive authority of any other agency.
1964. Law No. 4. § 41, article (1).

41. - in case of damaging contamination of waters, the local water authorities will stipulate the elimination of damage.
Act 4 of 1964. § 41, article (1), and 32/1964 (13th December) Government Decree, § 68, b.).

42. - In case of water contamination or significantly damaging pollution, the water authorities may limit or forbid the activities that are responsible for the emission of the harmful substances. Act 4 of 1964, § 41, article (1), and 32/1964 (13th Dec.) Government Decree, § 26, article (1).

43. - the local water management authorities may suspend the operation of any plant until water contamination or its danger have been eliminated in case they present a direct and harmful danger to the human population.
Act 4 of 1964, §41, article (1) and 32/1964 (13th Dec.) Government decree, §26, article (2).

44. - may stipulate, modify or withdraw individual limits in case of conducting sewage water into living waters
Act 4 of 1964, §41, article (1); and 3/1984 (7th February) OVH decree, §3, article (3).

45. - may ordain the obligation to pay sewage fine.
Act 4 of 1964, §15, article (1); and §41, article (1).

* The official translation is: Ministry for Environment and Regional Policy of Hungary

Natalia Voronkova, President
Econatsbank, Moscow

BACKGROUND INFORMATION

National Bank for Environment Protection of Russia – ECONATSBANK is a joint-stock close-end venture. It was founded in Moscow in April 1994 under patronship of the Ministry for the Protection of Environment and National Resources of the Russian Federation. The Bank is a unique one in Russia because about eighty percent of its authorized capital is contributed by ecological funds (Federal and some territorial). Two high-rated commercial banks are also among the founders.

The Bank has shown a rapid and stable development both in terms of range of operations (client settlements, deposits, credits and loans, trusteeship operations, transactions with state-issued bonds , etc.) and turnover (exceeding 50 billion Roubles). The declared and registered authorized capital is up now to 3 billion Roubles, 1,2 million ECU. The Bank is very close to comply with all the requirements of the Central Bank of Russia to be licensed to operate hard currencies. The charter of ECONATSBANK puts as strategic goals the attraction of investments to environment protection, assistance to ecology-related business, contribution in ecological science and technology progress and in broader sense work towards the creation for investors of favorable conditions to minimize their risks related to medium- and long-range environmental options.

Commercial risk for long-term investments in Russia remains high especially in respect to environment protection and use of natural resources: relationships between ownership and property liability are not duly regulated by law. Realizing the priority and complexity of strategic challenges ECONATSBANK regards as promising the following directions:

- getting on a stronger footing at the traditional banking market, building-up the capital to the size ensuring safety and liquidity,
- obtaining an excess to serve funds allocated by the

state budget and state off-budget foundations to solve environmental problems as well as the money rendered by foreign investors and bodies through preferential credits and grants,

- contribution to state ecological loans and bonds backed by anticipation of future revenues from use of natural resources (taxes, fees, fines),
- contribution to the development of mandatory and voluntary ecological insurance in Russia including insurance of property against losses caused by ecological accidents and insurance of investor liability against ecological risks due to new and uncovered by Russian laws in force- violations,
- contribution to shaping in Russia of the market of ecological services (environment protecting and nature-saving technologies, monitoring of environment, ecological audit and consulting, etc.),
- financing only the projects subjected to environment impact assessment according to internationally adopted procedures.

Being in the early stages of development ECONATSBANK is keen to establish business contacts with financial and other bodies of different countries involved in environment protection and management.

BACKGROUND PAPER:

SOME ASPECTS OF ENVIRONMENT PROTECTION FINANCING IN RUSSIA ECONATSBANK

Environment Protection Financing Systems took shape in the time of centralized planning. Plans of social and economic development contained indices of anticipated production outcome along with ecological tasks. These tasks were formulated for the state, regions and factories. The requirement in financing and sources (building capacities, materials, equipment, etc.) was determined based on environment protection plans.

Primary source of funds for environment protection was the State budget. But it is difficult to consider all this sources as independent. Main financing came from the State budget.

The transition to a market economy has changed economic relationships between the state and a factories accompanied by diminishing the former funding system and loosening state regulatory mechanisms. Factories became responsible for their own production and environment protection activities. The law of the Russian Federation "On the Environment protection" adopted in 1991 defined that a polluter bears responsibility for any environment damage. Introduction of this socially necessary principle was supported by economic mechanisms providing for financial sanctions for pollution and payment for natural resources as well as accumulation of all this money by state off-budget ecological funds, to spend on environment protection purposes.

The law contains incentives for effective environmental protection, namely: decrease of mandatory payments; tax exemptions; exemptions from custom duties for environment friendly imported equipment and products; preference crediting by ecological funds. Though a partial payment exemption of nature users (competence of the Ministry for the Protection of Environment and National Resources) and involvement of ecological

funds in financing and preferential crediting produced some positive effect (for instance, in 1992 total investments into economy of Russia were cut off by 45% but funding of environment protection projects from all sources was less only by 20%), other incentives were not enforced due to a strong opposition of the Ministry of Finance. This does not enable to endorse to full extent the mechanism combining fines and incentives.

The transition to a market economy also brought certain changes of the structure and the role of environment protection funding sources. Since 1990 there is a constant decrease of environment protection funding allocated by the Federal budget. Forecasts show that the Federal budget investments in environment protection in 1994 will be less by 44% as compared with 1993 (though the total in prices as on Dec. 1, 1991 remains at the same level). If in 1993 the investment ratio between the Federal budget and other sources was 1:2.3; in 1994 the ratio is expected at 1:4.5. The role of ecological funds as environment protection investors is increasing. Local budget assets are considerably higher now than before.

The finance situation of most factories has generally worsened and this has led to a decrease of the capability to re-invest profits and a decrease of deductions into amortization and investment funds. We do not know a single case when the government granted a lower interest investment credit for environment protection purposes whereas use of commercial credits is impossible due to high interest rates.

Commercial banks in turn cannot assess projects from the point of environment impact and finance (on the basis of expected profit estimate) even for highly profitable and quick-return environment protection projects, to say nothing of medium- and long-term loans.

Nevertheless we believe that in the field of environment management expectations of investment growth are justified. The signs of this are the following.

First, constant price increases for raw materials and energy and costs of building enterprises from various industries seek to introduce material-saving and low-waste technologies and to utilize production wastes;

Second, greater emphasis by the world community and stricter national production requirements, coupled with economic sanctions and strengthening of fiscal policies in cases of environmental violations.

Third, factories in difficult financial positions quite nonetheless allocate money for environment protection purposes;

Fifth, foreign investment flows to Russia is hindered by political interference into credit decision-making and there is a lack of special institutions which are able to effectively run the money and may become intermediaries in allocation of funds and in control for their use.

Sixth, there is an interest of Russian investors to participate in implementation of high pay-off environment protection projects.

We are certain that realization of such projects, especially large-scale ones, can be achieved with involvement of many state and private sectors investors and by introduction of different patterns of production - finance cooperation.

This process must find a support of the government which is supposed to stimulate market development in such a way to preserve and rationally use the nature assets. Different patterns of cooperation may be seen: consortium, industry and finance group, joint venture, joint production, etc. It is necessary to help the state in shaping ecological bond markets which would contribute to attract money for protection and reproduction of the environment.

There are vivid examples of cooperation between various market sectors in activities of ECONATSBANK founders.

To implement the government adopted program of environment improvement for Tula region a special

fund was set up. This fund has already started accumulating money allocated for the purpose from the Federal and local budgets, by the Federal, territorial and local regional ecological funds, by factories and private investors, by foreign investors (by means of grants), etc. The Federal fund and the group of factories and joint-stock companies participate in the project of utilization of solid plastic waste produced by electrotechnic factories in Voronej (Central Russia).

A finance and production association is being set up with the aim to manufacture and install car wash water regeneration cycle stations. The Moscow government supports the project. A number of factories, the Federal and Moscow ecological funds, two commercial banks (one is ECONATSBANK) will take part in it.

Charles Crowe
Solicitor and Legal Adviser
HSBC Holdings plc

KEY ENVIRONMENTAL ISSUES (I)

Eastern Europe

- Legacy of disastrous environment
 - highly polluting industries
 - dirty fuels, particularly high-sulphur coal
 - shortage of hard currency
- Decline of industry
- Contaminated sites main cause for concern

KEY ENVIRONMENTAL ISSUES (II)

Asia

- Problems of economic expansion
 - rapid industrialisation
 - migration from country to urban centres
 - sheer numbers of people
- Pressures on infrastructure
 - sewage and wastewater
 - solid waste
 - chemical waste

FIRST STEPS

- Legislation
 - trend towards tighter legislation everywhere
 - but need for better enforcement
 - and fines are inadequate
- Command and control policies
 - easiest option
 - not always most cost-effective
- Government incentives
 - fees and charges
 - can be put into dedicated environmental funds
- Government resources
 - Asia is already spending large sums
 - Eastern Europe may have to find other solutions

SOURCES OF FINANCE

- Economic growth
 - Asia's economies are generating resources
 - market economies are still developing in Eastern Europe
- Aid
 - political conditions inhibit assistance
 - general reluctance to give aid for environmental projects
- Soft loans
 - not enough, but increasing
- Foreign investment
 - balancing incentives and potential liabilities will determine how much investment is attracted

FRAMEWORK FOR THE FUTURE (I)

- Political framework
 - need for open exchange of information
- Legal framework
 - laws need to be clear, workable and achieve objective of a cleaner environment
 - no easy model to use as precedent
- Institutional framework
 - clear policy
 - effective government
 - independent judiciary
 - need for public/private sector participation
 - gains from a market approach

FRAMEWORK FOR THE FUTURE II

- Technological framework
 - investing in those who do the cleaning, rather than in the old plants
 - growth business of environmental technology
- Commercial/financial framework
 - investors want certainty
 - financiers do not want unlimited liability
 - structure, not sweeteners, needed

SHARED RESPONSIBILITY, NOT DOUBLE STANDARDS

- Shared interests in improving the environment
- West has its share of accidents; does not hold the moral high ground
- Emerging markets need to maintain control of resources
- Paying a fair price for raw materials and other exports of emerging markets to cover full environmental costs
- Ultimate objective is sustainable development

DAY TWO

**SESSION ONE:
ENVIRONMENTAL MANAGEMENT TOOLS**

JOHN M. GRAY
Senior Manager
Environmental Risk Management
Royal Bank of Canada

ENVIRONMENTAL MANAGEMENT TOOLS

Since the early 1990's there has been heightened awareness in Canada, on the part of the lending and investment communities, of the need to address environmental issues in their day to day business decisions. Royal Bank believes sound economic growth and sustainable development are inextricably interconnected. Furthermore, the legislative and regulatory environment in Canada lacks certainty, which can give rise to lender liability for substantial cleanup costs or the risk of borrower default.

Both in Canada and the USA, lenders can be held liable as owners or operators of contaminated facilities in which they hold a security interest, if they are deemed to have participated in management or exercised control. In our trust business, when acting in the role of trustee, executor, or administrator, there is the potential to be held liable for environmental problems which occurred prior to and after acceptance of the appointment. Likewise, agents traditionally used by the bank, such as receiver/managers, are increasingly wary of accepting work involving contaminated sites, because of the threat whereby they could become personally liable for problems of a magnitude which exceed the realizable value of the borrower's assets.

There is concern that government directives, such as cleanup orders, can drastically reduce a client's cashflow, thereby impairing a company's ability to service loan and other obligations.

Environmental legislation across Canada is seriously lacking in harmonization and certainty. Most provinces have already, or are in the process of introducing, new legislation and/or regulations, which almost invariably establish government funded cleanup bills as having priority in a sale or liquidation over secured creditors. Furthermore, there is precedent in the courts, particularly with respect to resource extractive industries, (such as

mining or oil and gas), that closure and decommissioning outlays should be provided for, before lenders or investors experience any recovery.

Fear of the unknown has largely shaped the Canadian Bank's position on environmental risk. This is considered a banking industry problem, and consequently we are working together, through the Canadian Bankers Association, to evaluate these risks more effectively, and at the same time, to lobby for fairer and consistent legislation. (see CBA brochure "Your bank, your business, and the environment").

Royal Bank operates from approximately 1,800 locations, and we are therefore a major property owner, landlord, or tenant. We are important buyers of a wide variety of materials, a significant energy consumer, and we must manage our waste to comply with new waste management regulations, (reduce, recycle, re-use). Also, the business activities of our tenants bear close attention. It is imperative that we conduct our own environmental affairs in a responsible manner, as good corporate citizens, to safeguard our employees, customers, and the public. Failure to do so can expose our senior officers and directors to personal liability under both Federal and Provincial statutes.

The BATA Shoe case in Ontario has highlighted the fact the senior stewards of our business enterprises cannot ignore the environmental consequences of their corporate actions. It is anticipated that enforcement of laws and regulations going forward will increasingly focus on the responsibilities of individual corporate managers. Consequently, we expect to see more and more plant managers and corporate executives faced with prosecution, stiff fines, and jail sentences. Even staff at the shop floor level will not be immune. If they have been neglectful, they are also subject to prosecution.

In keeping with our policy of giving appropriate consideration to environmental risks in the loan and investment portfolio, and to protect our shareholders from losses as a result of lender liability or borrower default, we have developed a system to deal with these issues.

Slide 1 – Identifying Risk Potential

List of potentially high-risk commercial/industrial sectors

Category III	Category II	Category I
<ul style="list-style-type: none">• Chemical and Petro-chemical Industries• Fertilizer• Foundries• Oil & Gas Production• Pesticide/Fungicide/Herbicide Manufacturers• Petroleum Refining• Pulp & Paper Industries• Resource Extractive Ind.• Steel• Waste Management• Wood Preservation	<ul style="list-style-type: none">• Electro-technological Ind.• Fabricated Metal Products• Farming Industries, Services and Supplies• Galvanizing Industries• Garages for repair of cars/buses/trains, etc.• Ink Manufacturing• Metallurgic Industries• Mining• Oil & Gas Exploration• Oil & Gas Products Manufacturers• Paint/Lacquer Manufacturing• Petroleum Bulk Stations and Terminals• Pharmaceutical Industries• Pipelines (excluding Natural Gas)• Pipelines (Natural Gas)• Plating Companies• Recycling plants handling solvents, batteries, used oil or liquid waste• Scrap and Waste Materials Ind.• Service Stations• Shipyards• Tanneries• Transportation Industries	<ul style="list-style-type: none">• Dry Cleaners• Electrical Sub-Stations• Furniture & Fixtures• Laundry & Garment Services• Leather & Leather Products• Lumber & Wood Products• Printing & Publishing• Stone, Clay & Glass Products• Textile Industries• Warehousing

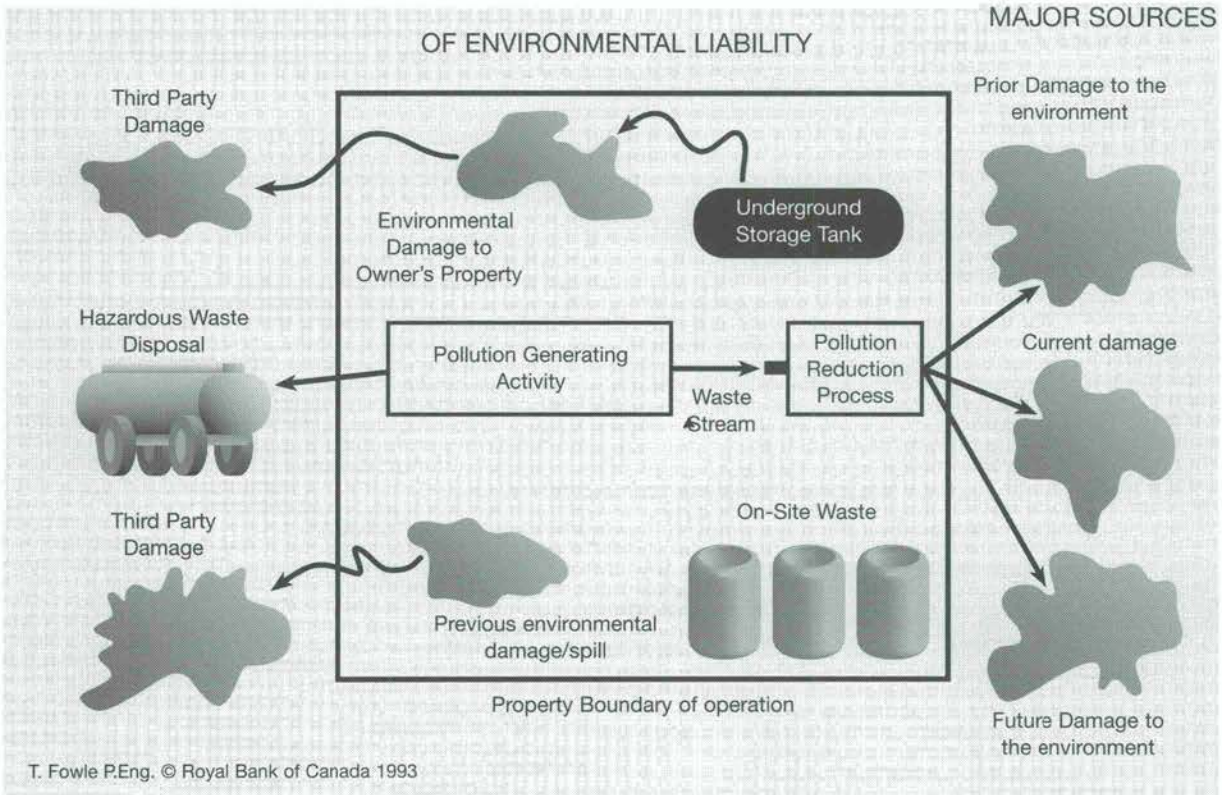
• Residential, agricultural, and commercial properties or facilities which are not included in the above list are categorized as "Other"

SLIDE 1 – IDENTIFYING RISK POTENTIAL

This categorization is useful in focussing our field lending officers and head office credit risk management personnel on the magnitude of the environmental issues which are inherent in different industries. Note category III is the most complex, involving industries such as petrochemicals, pulp and paper, steel, waste management etc. Because of complexity external resources will almost invariably

be required to evaluate the environmental issues of clients in this category. In category II, external resources will frequently be used to address specific risk issues or concerns. Note that residential, agricultural and commercial properties or facilities which are not included in the above list are categorized as "other".

SLIDE 2



SLIDE 2 – THE CLIENT QUESTIONNAIRE

Our commercial/industrial clients complete a questionnaire which identifies historical use of the property, processes which must be managed such as hazardous substance use, emission streams, waste management practices, and the potential for third party liability. At this step we also gain information on whether certificates of approval and licences are in place, together with the track record on compliance. A generic questionnaire is enclosed as Appendix 1. Specialized questionnaires and procedures have been developed for certain industries where we enjoy a large market share such as oil & gas, agriculture, multinational corporations etc. In addition, we use a shorter questionnaire, and more cost effective process, when dealing with smaller loan facilities in low risk industries. Developing such specialized procedures, which are focussed and practical, is an ongoing activity.

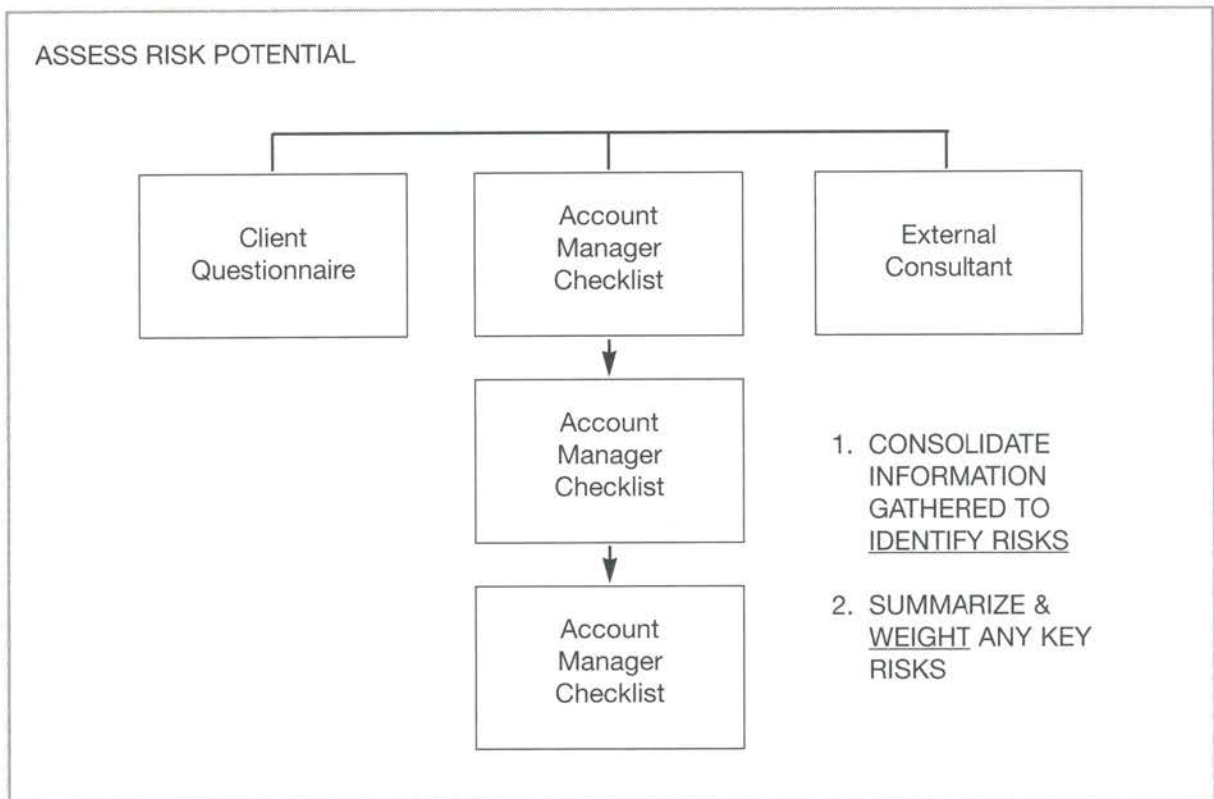
SLIDE 3 – THE LENDING OFFICER EVALUATION

The lending officer will meet with the client to review the questionnaire and tour the operation. In this process he will complete a worksheet designed to isolate the key environmental risks which require management, and to determine whether we feel comfortable in evaluating these internally. When we are dealing with real property as collateral security, or with a higher risk industry category, it is common to call-in a qualified consultant to do selective investigations. During this stage of the risk analysis process we will determine if it is possible to:

- Terminate (or eliminate any problem area)
- Tolerate (or live with the condition)
- Transfer (the risk by buying insurance)
- Treat (or manage the risk)

This is a four T's approach.

SLIDE 3



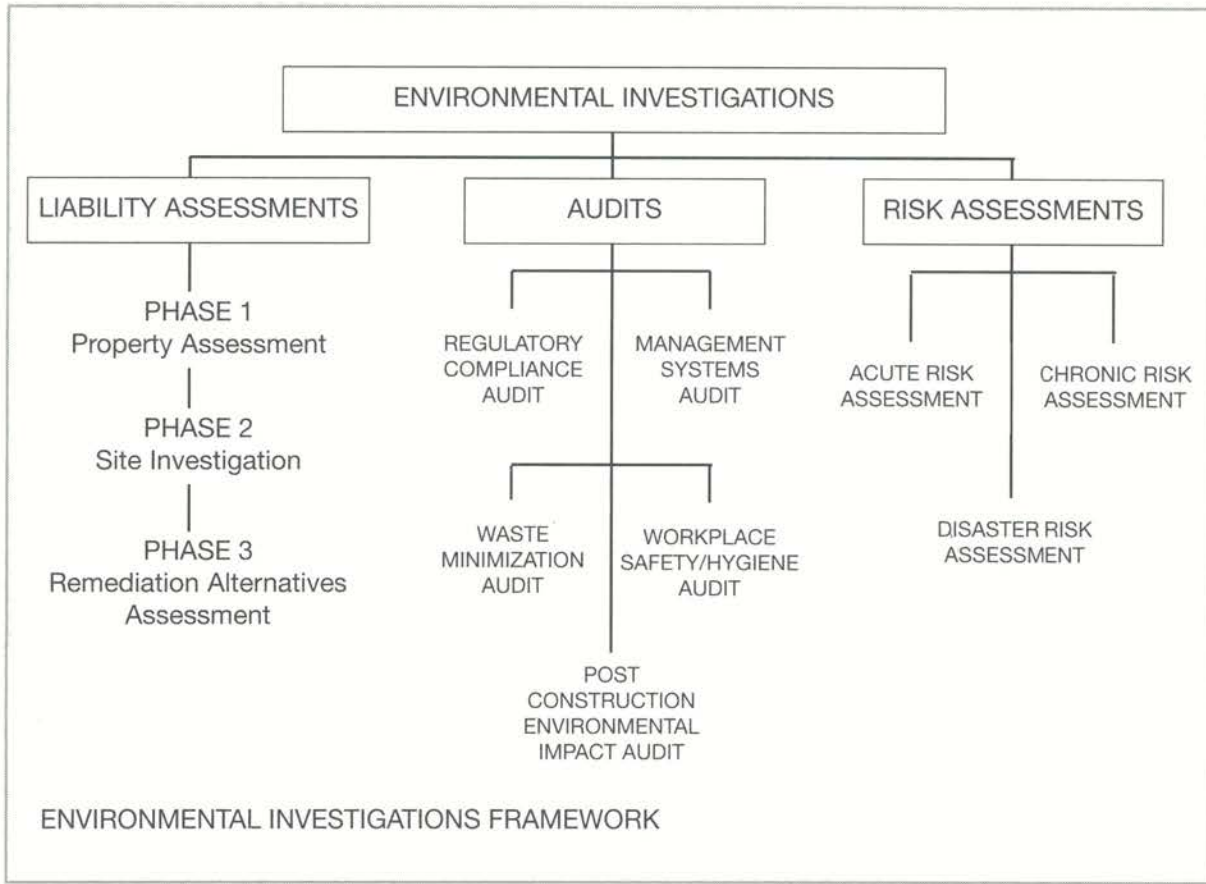
SLIDE 4 – USING EXTERNAL EXPERTISE

Royal Bank has an extensive list of consultants who have been prequalified. The list is segregated by geographic presence, special qualifications in sciences, and the type of assignment we believe they are capable of managing. Not only must the consultant be technically capable of doing the job, but we must keep in mind that, if need be, he/she must be recognized as expert witnesses by a court. Although the engineering profession is regulated as a whole, there is currently no accreditation program for environmental professionals, as such, in Canada. Unless we are in a realization scenario, the investigation will be commissioned, and paid for, by the client. This preserves “solicitor client privilege”, and distances the bank from any notion of control or management of the business or property. The scope of the assignment will be clearly documented. For purposes of clarity we now avoid the use of the term “audit”. Note from the slide audit has a different meaning from a property assessment. We expect our consultants at a minimum to follow standards such as

those of the Canadian Standards Association. Benchmarking the environmental affairs of the company and the condition of the site during the credit evaluation process, before taking steps to realize upon our security, and at the time of ultimate sale of the property are critical from a due diligence standpoint.

The Credit Decision

At this point a decision will be reached on whether we believe our client can manage environmental affairs in a fashion which does not expose us to undue risk, and the terms and conditions under which we will extend the facility. Certain remediation measures, or commitment to capital expenditures, (such as pollution abatement equipment), may be required. We frequently hold back advancing the full facility until such commitments have been met. Environmental risk is incorporated in our overall borrower risk rating system, (a point score concept), which may ration credit, limit term and/or affect loan pricing. It is our policy to review and update this process, as required, on an annual basis.



Loan Documentation

Loan agreements are tailored to the situation, but will invariably entail conditions precedent, representations and warranties, covenants, indemnifications, and events of default pertaining to environmental risk management. Regular compliance certificates will be required. Generally the borrower certifies to be in compliance, undertakes to notify us of any adverse events, agrees that the bank may conduct environmental investigations when there is just cause, will indemnify us in the case of any legal proceedings or orders, and will “make us whole” in the event the value of our collateral is impaired as a result of their actions or operations.

CLIENT QUESTIONNAIRE

Royal Bank of Canada

Historical and Site Review

The borrower should provide the information required by the attached questionnaire. The information contained in paragraphs H to Q inclusive should cover a period of at least 50 years to date, and if the borrower does not have this information (e.g. site history), it should be requested to obtain it, and to use its legal advisors or other consultants to do so should this be necessary. The lending officer should not advise the borrower as to how to complete the questionnaire. The questionnaire should be dated and signed for the borrower by a senior officer. A separate questionnaire should be completed by the borrower for each property and/or facility that the borrower owns and/or operates, as well as for the properties and/or facilities of any relevant subsidiaries of the borrower. A covering letter to send to the borrower is stored separately on the diskette. It may, of course, require editing to fit the facts of the particular situation.

HISTORICAL AND SITE REVIEW

Borrower
Property/facility

- A. Owner of property/facility
Name _____ Tel No. _____
Address _____ City _____
Postal Code _____ Province _____

- B. Date current Owner Took Title _____
Total Acreage of Property _____
No. of Buildings on Property _____
No. of Employees _____

- C. Date of Construction of Present Buildings on the Property _____

- D. Any Environmental Assessments of the Property Carried out in the last Five Years _____

Please provide copies

- E. Current use(s) of Property (Describe)
Commercial _____
Industrial _____
Residential _____
Recreational _____
Agricultural _____
Vacant/Open _____
Other _____

- F. Borrower's Intended Use of Property, If Different from E. (Describe)
Commercial _____
Industrial _____
Residential _____
Recreational _____
Agricultural _____
Vacant/Open _____
Other _____

- G. Current Zoning of Property
Commercial _____
Industrial _____
Residential _____
Recreational _____
Agricultural _____
Vacant/Open _____
Other _____

- H. Past Use(s) of Property Prior to Current Occupant (Describe)
Commercial _____
Industrial _____
Residential _____
Recreational _____
Agricultural _____
Vacant/Open _____
Other _____

- I. Past Zoning(s) of Property
- Commercial _____
- Industrial _____
- Residential _____
- Recreational _____
- Agricultural _____
- Vacant/Open _____
- Other _____

- petroleum refining, blending, storage or distribution facilities _____
- chemical producers _____
- pesticide/fungicide/herbicide manufacture or formulating _____
- paint and ink manufacturing _____
- smelters or incinerators _____

- J. Any Special Permits Issued
- _____
- _____

- Q. All other properties owned or occupied at present or during the past 50 years by the borrower.
- _____
- _____

- K. Products Manufactured or Processed
- _____
- _____

HAZARDOUS MATERIALS AND WASTE

- L. Principal Raw Materials Used
- _____
- _____

1. Is the property free of any sources of infectious waste (medical pathological waste)?

Yes No N/A (i.e not applicable)

- M. By-Products or Wastes Produced
- _____
- _____

2. Does the property manifest its hazardous waste and ship it off-site to an approved hazardous waste disposal facility?

Yes No N/A

- N. Catalysts Used (i.e.: substances that aid a chemical reaction while themselves remaining unchanged)
- _____
- _____

3. Has the property ever received a notice of violation or other similar claim from a regulatory agency for improper hazardous materials/waste storage or disposal on site? If yes, please supply supporting documentation.

Yes No N/A

- O. Hazardous Maintenance Supplies used for Machinery and Equipment
- _____
- _____

- P. Did/does any past or present use of the property involve any of the following:

4. If the property has received such a notice, have all issues related to the notice been satisfactorily corrected? If yes, please supply supporting documentation.

- metal foundries _____
- metal plating industries _____
- leather tanneries _____
- coal gasification works _____
- wood preservation facilities _____
- scrap yards _____

Yes No N/A

5. Has the property ever received a notification letter or other communication about involvement, or potential involvement, in a site clean-up at an off-site location? If yes, please supply supporting documentation.

Yes No N/A

6. Is the property free of any current or pending legal action of any kind related to hazardous materials/waste storage or disposal?

Yes No N/A

Details: _____

POLYCHLORINATED BIPHENYLS (PCBs)

1. Does the property contain any equipment, such as transformers or capacitors, that may contain PCBs?

Yes No N/A

2. If PCB-containing electrical equipment is present at the property, is it marked with ENvironment Canada labels (black and white, or green and white for contaminated property)?

Yes No N/A

Details: _____

3. If PCB-containing electrical equipment is present at the property, is it registered with the local fire department?

Yes No N/A

If yes, please provide a copy of such registration.

RADIOACTIVE MATERIAL

1. Does the property have any materials containing radioactive sources (low level or otherwise)?

Yes No N/A

Details: _____

EASEMENTS

1. Are there cross-property easements (roadways, pipelines, etc?)

Yes No N/A

Details: _____

DUMPING AREAS

1. Does the property have any pits, ponds, lagoons, or other dumping areas on site (other than normal water retention ponds required by some jurisdictions)?

Yes No N/A

2. Does the property have any landfills, junkyards, incinerators or other waste disposal facilities or buried wastes?

Yes No N/A

Details: _____

ASBESTOS

1. Has an asbestos survey of the property been conducted? If yes, please supply copies of supporting documentation.

Yes No N/A

2. Did the survey find the buildings to be free of asbestos-containing materials? If yes, please supply copies of supporting documentation.

Yes No N/A

Details: _____

UREA FORMALDEHYDE (UFFI)

1. Does the property contain urea formaldehyde foam insulation (UFFI)?

Yes No N/A

RADON

1. Have any radon tests been performed at the property?

Yes No N/A

2. If radon tests have been conducted, were the results below 800 BQ/M³, Health & Welfare Canada's guideline? Please supply supporting documentation.

Yes No N/A

3. If elevated radon levels have been discovered at the property, have ventilation systems or similar remedial measures been implemented?

Yes No N/A

Details: _____

UNDERGROUND STORAGE TANKS

1. Does the property have any underground storage tanks or underground pipelines (USTs)?

Yes No N/A

If yes, please indicate the contents.

Details: _____

2. If USTs exist at the property, have the proper registration forms been submitted to the designated provincial regulatory agency? If yes, please supply supporting documentation.

Yes No N/A

3. If USTs exist at the property, are leak detection equipment or secondary containment systems installed on the tanks?

Yes No N/A

4. If USTs exist at the property, have they ever been tested for leaks? If yes, please supply supporting documentation.

Yes No N/A

5. If USTs exist at the property, has there ever been a leak, spill or discharge?

Yes No N/A

Details: _____

ABOVE GROUND STORAGE TANKS

1. Does the property have any above ground storage tanks or pipelines?

- Yes No N/A

If yes, please indicate the contents.

Details: _____

2. If yes, has there ever been a spill, leak or discharge?

- Yes No N/A

BULK GASES

1. Are there any bulk gases (e.g. propane, butane, carbon dioxide, nitrogen, ammonia/stored on-site)?

- Yes No N/A

Details: _____

INDOOR POLLUTION

1. Have there been any complaints or claims filed by any workers at the property for any environmental health reasons?

- Yes No N/A

Details: _____

2. Has drinking water at the property always complied with provincial requirements?

- Yes No N/A

Details: _____

ENVIRONMENTAL HAZARDS ON ADJACENT PROPERTIES

1. Are there any pits, ponds, lagoons, landfills, dumps, junkyards, incinerators or other waste disposal or treatment facilities or buried wastes adjacent to the subject property?

- Yes No N/A

Details: _____

INSURANCE

1. Does the borrower's insurance require annual environmental reviews or assessments of the property or business to determine environmental liabilities?

- Yes No N/A

2. If yes, are there policy limits?

- Yes No N/A

Details: _____

POLICIES AND PROCEDURES

1. Are there any environmental policies in place concerning the property?

- Yes No N/A

If yes, please provide a copy.

2. Are there any spill and accident prevention/clean-up/reporting plans in effect for the property?

- Yes No N/A

Details: _____

GENERAL

1. Is the property located in an area with a history of environmental problems?

Yes No N/A

Details: _____

2. Is the property located on or close to any ecologically sensitive area (e.g. wetlands, flood plain, endangered species habitat, scenic areas)?

Yes No N/A

Details: _____

3. Does this facility discharge effluents directly to surface waters (streams, creeks, rivers, lakes)?

Yes No N/A

Details: _____

4. Does this facility discharge effluent to a municipal sewer?

Yes No N/A

Details: _____

5. Does this facility have storm sewers to handle surface drainage or does it rely upon surface run-off?

Storm Sewers Surface Run-off Both

Details: _____

6. Have soil samples ever been taken from this property and analyzed for hazardous materials?

Yes No

Details & Findings: _____

GENERAL COMMENTS

In addition, please provide copies of the following documentation where available:

- all environmental certificates of approval, environmental authorizations, licences and permits that relate to the facility and property
- an inventory of hazardous materials existing on the property (in Canada, this should be a copy of the WHMIS (Workplace Hazardous Materials Information System) inventory where the facility falls under these federal regulations. The equivalent should be provided in other jurisdictions.
- waste registration or generation reports covering each of the hazardous wastes registered for and/or transported from the facility.

_____, 199_____

(Borrower)

By

As a general guide, the hazardous materials which are more commonly found are the following:

Asbestos: Usually found in insulation, fire proofing, ceiling and floor tiles, cement/asbestos board, taping and sealing compounds. Asbestos risk is greatest when it is friable (crushable, flaking) and becomes airborne. Microscopic analysis is required.

P.C.B.'s Found in solvents and dielectrics used in the manufacture of electrical components. Electrical transformers are a major source of potential P.C.B. contamination. P.C.B.'s have been used also as hydraulic fluid, as surface coating for carbonless copy paper a plasticizer in sealants and as a flame retardant in lubricating oils.

Methane Gas: Colourless and odourless. Old landfill sites are a significant source of methane contamination. It is the major constituent of natural gas. It is frequently formed by the decomposition of organic materials. Air sampling is required to determine concentration.

**Urea
Formaldehyde:** May be found in foam insulation, glue used to manufacture plywood, particle board, furniture. Air sampling is required to determine concentration.

**Dioxins and
Furans:** Most commonly found in industries which use substantial quantities of chlorine e.g. pulp and paper industries. They are also a by-product from the manufacture of other chemicals e.g. pesticides and can be found in chemical, commercial and domestic wastes. Major exposure occurs in the ambient air near incineration sources.

Lead: Lead is found in plumbing, paints, inks, gasoline, storage batteries, the lining of taps and pipes, radiation shielding equipment (ie. hospitals, dentists). Lead salts are used in insecticides, pigments, glazes, plastic and rubber compounds. Lead is usually found to contaminate the soil close to lead smelters, paint manufacturers, battery producers, electronic component companies, printing forms and metal foundries.

Radon: An indoor pollutant, it is a colourless, odourless, tasteless gas, produced by the decay of Uranium-238. It tends to be concentrated in underground deposits of granite, coal, phosphate and uranium and percolates upward out of the soil and seeps into buildings through cracks in the foundation. It can also dissolve into underground well water and is released once inside buildings. Because the existence of radon depends upon geological factors, it is a regional issue and local health departments can be an excellent source of information as to whether or not radon is a potential problem in a specific area.

There is also a group of compounds which pose a risk to the surrounding community if allowed to escape to the atmosphere. Some of the most commonly encountered include propane, ammonia, chlorofluorocarbons (CFC's), hydrofluoric acid, and hydrogen sulphide.

ENVIRONMENTAL MANAGEMENT TOOLS

1 HOW CAN ENVIRONMENTAL MANAGEMENT TOOLS BENEFIT THE BANKS?

A key objective of banks in addressing the issue of the economy and the environment is to *minimise the environmental risks arising from their lending operations*. This presupposes a high degree of environmental awareness and ecological knowledge within the banks.

Companies can assist banks in their risk assessment of borrowers by collating facts and figures about themselves, such as environmental audits, environmental reports, and eco balances:

- the various types of *environmental audit* are conveniently and succinctly summarised in the Discussion Paper for this UNEP meeting.
- as an aid to drafting *environmental reports*, the WICE (World Industry Council for the Environment) recently issues a handy Managers Guide.

I shall *confine* my remarks below to *lending business* since any risks in this area have already had an effect on earnings. Nevertheless, environmental management tools can also enable us to make meaningful statements about *investments*.

2 CURRENT STATUS OF THE DEVELOPMENT OF ENVIRONMENTAL MANAGEMENT TOOLS

Government environmental policies are increasingly geared toward *creating the necessary framework for self-monitoring by companies* within a socio-ecological market economy. This accords with the banks' security needs. The higher the degree of standardisation in 'ecological book-keeping', the simpler it will be for banks to use set formulae and key ratios to evaluate, compare, and utilise environmental audits and ecological impact ratings for credit rating purposes.

Environmental management tools are not yet firmly established. Although the EU's EMAS (Environmental Management and *Audit* Scheme) Regulation has been agreed upon. It will not come into force until mid-1995. Furthermore, in its current form its significance as a credit rating instrument is limited, primarily because it is restricted to the audited locations of production sites. Despite the ever increasing number of *environmental reports*, they do not really allow the sort of cross-comparisons made possible by standard company reports and annual financial statements. Ecological evaluations of material flow and energy inputs – the so-called '*eco balance sheets*' – are often based on national standards with differing system limits, thus further impeding cross-comparisons.

3 CONCLUSIONS ARISING FROM THIS SITUATION

As far as answering banks' specific questions about how to minimise the environmental risks arising from their lending operations is concerned, the environmental management tools currently available range *from inadequate to impractical*.

These tools are undergoing rapid development, however, and now is the time for us at the banks to make clear our needs. If we have access to all the data relevant to us – which ideally will already be in *standardised* form, presented in a readily *comprehensible* way and *checked* – this will not only facilitate our work but will also help us to improve *our own efficiency*.

4 10 POINTS THAT BANKS WOULD LIKE ENVIRONMENTAL MANAGEMENT TOOLS TO CONSIDER

In our view the following subject areas should be addressed by the environmental management tools:

The Swiss banks are actively involved in working groups concerned with the design of new environmental management tools. We hope that before long these tools will start to yield greater benefits for the banks. Avoidance of misdirected loans is, after all, a part of *sustainable development*.

- > **Borrower's exposure**
How great is the borrower's exposure with respect to contaminated sites, municipal and hazardous waste, possible pollution of air and water, risk of polluting accidents, and consumer criticism?
- > **Official classification**
How has the borrower's land been classified in official land registers showing suspected site contamination or similar records (where such exist)?
- > **Conformity with environmental legislation/due diligence**
Has the borrower complied with the relevant environmental legislation? Does the borrower have supervisory and executive control?
- > **Lender liability**
Does local legislation mention any civil and/or criminal joint liability of lenders?
- > **Insurance cover**
Are the identified environmental risks covered by insurance policies? And if this is not possible, have appropriate provisions been made?
- > **Investment in environmental measures**
What environmental protection measures have been invested in over the last three to five years?
- > **Eco criteria in investments**
When investments are planned, what criteria are taken into account with regard to energy and water consumption, use of raw materials, waste, waste-water, recycling, etc?
- > **Technical status of plant**
How can the technical status of (production) plants be assessed in sector-wide and regional comparisons?
- > **Environmental management**
What environmental management measures have already been implemented or are planned – e.g. eco audit, environmental desk, environmental report, 'green' labels for specific products?
- > **Environmentally based reputation**
What is the company's reputation with respect to environmental management and how do its product range and public image rate in ecological terms?

Environmental Management Tools

David R Smith

The Emergence of Environmental Risk Management

I. BACKGROUND

I am going to talk briefly about environmental credit risk management tools from a slightly different perspective, and in terms of broad principles.

It seems to me that before you design a good tool, you have to have an appreciation for the work that needs to be done. And, in the spirit of the United Nations Statement on Banking and the Environment, I should like to suggest that there are at least two major concerns that need to be considered when designing environmental management tools: the risk of inflicting irreparable harm and degradation on the natural environment as a result of environmentally malign lending and investment decisions, and the risk that such decisions will have a negative effect on the going concern value and goodwill of the bank. For the purposes of this discussion, the latter of these two risks is of primary interest, although it cannot be divorced from the former.

Consider that the capital market system is, itself, a human invention. Since commercial activity that destroys the environment could not occur without finance we might surmise that capital market technology is inadequate for the perpetuation of human life. Or, in biological and evolutionary terms, we might describe it as unfit. The question is whether or not the capital markets are capable of changing and adapting. I believe it is, and that bankers' attempt to design policies and procedures to minimize and mitigate environmental risk is evidence of this adaptation.

Risk is a fundamental business concern for the financial services sector. It comes in many guises from interest rate risk to credit risk, liquidity risk, systemic risk and so on. Environmental risk is a recent addition to the lexicon. Although it is often

relegated to a special class of legal risk, many believe that environmental problems are more tractable by free market methods than by regulation alone. It is a belief shared by industrialists and bankers' alike, including those who subscribe to the United Nations Statement on Banking and the Environment (1992).

Of course, free market principles go hand-in-hand with risk management. With the ascendance of risk management as a more exacting business and profit-related activity, bankers, investors, borrowers, and insurers have witnessed innovation in derivative instruments, the creation of new financial models such as RAROC (risk adjusted return on capital), and new protective systems such as netting for swaps and foreign exchange transactions. To what extent is this technology appropriate for dealing with environmental risk? Furthermore, what can adaptive complex systems, such as those found in biological and physical science, tell us about the behaviour of markets and the effectiveness of state-of-the-art financial instruments? The phenomenon of environmental risk raises several interesting questions, as well as possibilities for the future development of capital market technology.

Ten years ago, even five years ago, the environment was an irrelevant or, at best, marginal issue for the majority of credit decisions. Yet, as the scale of environmental obligations and liabilities are revealed – Texaco's planned \$7 billion investment over five years, Superfund's \$500 billion clean-up costs over 40 years, the United States petroleum refiners' \$37 billion costs under the amended Clean Air Act – it is clear that some assumptions underlying environmental remediation, economic development, information flows, and financial analysis, deserve closer attention.

By pushing up transaction costs and liability exposures, casting doubt on the reliability of asset valuations, undermining trust in real estate security, and overturning the priority of bankers' liens in some jurisdictions, environmental risk has become a key factor in determining creditworthiness, cost of capital, and the flow of funds to specific industrial sectors. Furthermore, when commercial activity is

measured in terms of economic-environment interactions, it is not always possible to rely solely on quantitative judgements. Tools such as environmental management systems, cost-benefit analyses, and environmental impact assessments, frequently involve qualitative values and implicit ethical positions which are hard to ignore. John Bohn (1991) of Moody's Investors Service underlines the scale of the challenge:

In the 1980s, financial professionals found that they had to scramble up a steep learning curve to master the avalanche of new instruments pouring into the market – the swaps and options, 'swapfions', derivatives, and all the other wrinkles of structured finance. In the 1990s their task is even greater. Grasping the subtleties, and at the same time the vast scope, of environmental issues as they impinge upon finance is going to demand all our intelligence and all our application.

Former inertia in the capital markets is giving way to adaptation, driven primarily by the spectre of financial loss. One of the results is a loss of traditional neutrality on environmental issues. This shift in attitude has accompanied the development of environmental credit risk management, and is affecting standards and practices of corporate disclosure, accounting, auditing, risk analysis, and strategic asset allocation.

Recognition of environmental risk in the capital markets coincides with the now common view among financial professionals that good environmental practices are a hallmark of good business². A variation on the theme is the faith among bankers that good management will be able to cope sensibly with environmental hazards. In this climate, customer relationships that enable bankers to gain an in-depth knowledge of the business and its operations, could pay dividends over a purely transaction-based service. Furthermore, if companies are to make the necessary adjustments so that their operations are cleaner and less energy and resource dependent, they will need both professional advice and capital investments over the long-term.

Rada and Trisoglio (1992) among others have suggested that one of the changes that the capital markets might make to encourage sustainable development is to adopt a longer-term view of customer relationships, with possibly higher levels of equity participation for some banks. Porter (1992) has argued in another context that short investment horizons in the United States' are a symptom of a larger, systemic weakness, which is threatening the competitiveness of American companies. Thus economic strength and sustainability can be mutually reinforcing.

Environmental risk management is also related to a grass-roots movement among some banks and businesses to adopt codes of ethically and socially responsible behaviour. Cooperative, even altruistic actions in the marketplace are hardly new, but the current wave of social and environmental conscientiousness suggests there is a popular demand for a counterbalance to the invisible hand of the market. The suggestion is supported by evidence such as Gallup's study, *Health of the Planet* (1992). From the results of a twenty-two nation survey, based on over 22,000 opinions, Gallup discovered: 1) that in fifteen out of twenty-two countries, the environment was volunteered as one of the top three most important problems confronting the nation, and 2) that a majority of people in all twenty-two countries believe environmental degradation will affect the health of their children or grandchildren. Two issues were predominant: concern for future generations – intergenerational equity, and sustainability of natural resources. Obviously, these issues are closely linked to the concept of sustainable development.

That social values are influencing law-makers, determining alternative criteria for lending and investment decisions, and steering the concept of fiduciary duty towards a more all-encompassing responsibility for stakeholders, is well established. By tapping this source of social conscience, banks have an opportunity to attract highly motivated employees and depositors³. Yet this area remains ill-defined and fuzzy for most financial institutions. More often, environmental risk management

programmes are put in place to obtain knowledge of a borrower's environmental obligations and liabilities; not to generate goodwill, although the two functions may be complementary.

2. CHOOSING AN ANALYTICAL FRAMEWORK

Bankers who endorse the United Nations Statement on Banking and the Environment (1992), and many who do not, share a common conviction that economic well-being and ecological protection are inextricably linked. The general case for a relationship between finance and global ecology is made by several authors including Sarokin and Schulkin (1991), who wrote:

The rising tide of environmentalism, which has already greatly altered smokestack industries, is affecting the financial services sector as well. As was the case with the manufacturing sector, the impact of environmentalism on the financial community may well be substantial. Banks that do not take an active stance on environmental issues may instead find themselves reacting to a host of societal, financial, and regulatory pressures.

What are the logical consequences of recognizing an interdependence between ecology and economics? Ecological economic principles, which might deliver a sustainable future, call for an adequate appraisal of complex environmental interactions. Since these interactions are virtually ignored by conventional economic and financial analysis, the prospect of mapping them to gain information on environmental risk challenges bankers' credulity as well as their ingenuity.

Part of the difficulty arises from incompatible analytical frameworks.

Neoclassical economics, the zeitgeist of the last thirty years, uses an analytical framework that is atomistic, mechanistic, and derived from classical Newtonian dynamics. In contrast, the ecological economic framework is contextual, pluralistic, interconnected with the biological and physical

world, and dependent upon the first and second laws of thermodynamics.

From an ecological economic perspective, neoclassical methods are appropriate in limited circumstances and for solving specific types of problems. For example, they reinforce the objectives of precision and control in engineering and manufacturing, which first became important in the industrial revolution. However, they are inappropriate for cost-benefit appraisals that involve environmental values.

From a neoclassical perspective, ecological economics is mostly irrelevant. For example, in a neoclassical economic model it is meaningless to talk about environmental limits or carrying capacity, because it is assumed that scarcity will trigger price signals that will encourage investment to be directed towards less scarce resources, and towards research in the appropriate technological response.

From a purely practical viewpoint, bankers may wish to leap-frog the argument. To gain an in-depth understanding of environmental risk, however, one cannot ignore environment-economy interactions, which are frequently obscured by neoclassical economic models. Although the problem is by no means easily overcome, several banks have realized that the cost of not trying to solve it is greater than simply ignoring it. They have therefore begun to examine or, at least, recognize the black box of linked economic and ecological systems.

Currently, the dynamics of linked ecological and economic systems are not well understood. What is known is that ecological and economic systems exhibit the traits of complex systems. Complex systems are characterized by complex exchanges of energy, matter and information, strong (usually non-linear) interactions between the parts, complex feedback loops which make it difficult to distinguish cause from effect, lags, discontinuities, thresholds and limits, and the inability to simply add-up or aggregate small scale behaviour to arrive at large-scale results (Costanza et al, 1994).

A modeling technique That is applicable to complex systems is nonlinear dynamic analysis. Nonlinear dynamic analysis is not only capable of modeling complex systems, it is also very good at distinguishing patterns of random and chaotic behaviour. For example, it helps explain the effects of crowd psychology and fads on speculative markets (Peters, 1991), and the existence of positive feedbacks in the economy (Arthur, 1990). Mandelbrot (1982) used a form of nonlinear dynamic analysis to predict returns on the New York Cotton Exchange. Furthermore, its accuracy in capital market applications suggests that some of the present assumptions about investor behaviour and equilibria in the economy, including The efficient markets hypothesis, are incorrect.

Significantly, for environmental risk analysis, a complex systems approach acknowledges That there are no independent, isolated variables: everyThing is connected within one large system of perpetually evolving complexity. In effect, it offers an analytical framework that allows externalities, such as taxes and pollution, to be seen as interrelated with the economic system. Within a fully realized ecological economic model, the internalizing of externalities may therefore be a redundant exercise.

3. ENVIRONMENTAL STRATEGIES FOR BANKS

The World Bank and the European Bank for Reconstruction and Development have acknowledged basic ecological economic principles in their mandates and procedures. Commercial banks such as National Westminster Bank and Deutsche Bank have also taken purposeful strides down this road.

So far, in the public sector, three broad strategies have arisen. The first is to adopt internal controls to improve energy efficiency, minimize waste, recycle paper, and generally reduce the impact of the bank's physical operations on the environment. The second strategy is driven primarily by public relations and marketing concerns and may extend to offering intermediation services so that depositors' funds are loaned to corporations with high environmental or ethical standards. A third strategy is to analyse

environmental risks according to the financial and credit risks they might impose on the assets of both client corporations and the bank itself. This strategy probably provides the best fit with most banks' core competencies of corporate scrutiny and credit risk management. The majority of banks, which have adopted environmental strategies, have selected this type of environmental risk management method.

4. TOWARDS A PORTFOLIO ANALYSIS THAT INCORPORATES SUSTAINABLE DEVELOPMENT CRITERIA

A portfolio approach to lending and investment that incorporates sustainable development criteria remains experimental. Indeed, an operational definition of sustainable development is elusive. However, there are some interesting, if only general, guidelines from two sources. The first is from Professor Richard Norgaard (1993), who suggests:

If development is not now sustainable, it is because we are transferring too little capital – natural, human, and produced – to future generations. Thus, sustainability and capital markets are intimately linked from the start. Sustainability will entail greater levels and a different mix of investments in the future, stimulated by new institutions to encourage individuals and corporations to make such investments. [Research] needs to stress 1) the difficulties of determining when investments are resulting in the right mix of “trees and chainsaws” and 2) what institutions might do this best, ie. how might existing companies and agencies involved in finance help in the design of appropriate institutions.

Other points for considerations are offered by W. Ross Stevens (I 993) of El. duPont de Nemours and Company:

- (i) A narrow focus on financial risks from operations would be necessary but by no means sufficient;
- (ii) Assessments must include resource requirements and product impacts;

- (iii) An enterprise's capability to service environmentally influenced future markets must be included;
- (iv) While every effort should be made to assess in quantifiable terms, qualitative assessments may also have a place.

5. DIFFICULTIES IN DETECTING AND INTERPRETING ENVIRONMENTAL RISK SIGNALS

Banks that wish to detect and interpret environmental risk signals face several difficulties that are only partially overcome by state-of-the-art environmental credit risk programmes.

To begin with, neoclassical economic Theory treats the natural environment as both a source of free gifts and a sink for freely disposable wastes. Consequently, external effects, such as the depletion and pollution of natural resources, are not automatically incorporated into market prices. The full costs and benefits of environmental goods and services, held both privately and in common, therefore tend to be undervalued. Although methods for explicitly incorporating non-market, environmental values exist in the form of cost-benefit analyses, the methods that are available are more suited to public policy decisions than corporate scrutiny. Where firms have conducted cost-benefit analyses, banks might find it worthwhile to request copies. With the exception of major projects, however, cost-benefit analyses can be unwieldy, inappropriate, and expensive for general credit assessments.

A complicating factor is the distortion of environmental values within the price system. Governments, for example, frequently subsidize energy prices thus contributing to pollution and resource depletion. Market prices are influenced by the relative scarcity of resources, and by factors beyond the boundaries of economics. As Chades Perrings (1987) has commented, "the extra-economic conditions of distribution – cultural, legal, ideological, and political – are also reflected in

relative prices". It would be wrong, however, to assume that a proportional or symmetrical relationship exists between environmental conditions and the market price system. Overfishing in the world's oceans will not be alleviated by rising prices that will dampen the demand for fish. A myopic view of market forces, isolated from the real world, can result in surprises within the global system, which financial analysts might call "event risk". In The fishing industry, an event risk would be the extinction of a species, or the depletion of stocks to the extent That fishing companies involved in extraction and production are unable to repay accumulated debts.

Another difficulty arises from the lack of environmental information currently available in corporate accounts. Even when a firm is potentially liable for environmental damage, the costs are often difficult to determine accurately. In trying to assess the financial risk associated with economic-environment issues, banks may therefore find that They are moving independently of price signals.

Finally, sources of environment risk often lie beyond the traditional scope of credit analysis. For example a chemical company might appear to be financially sound. But, if it depends heavily on exports to a country that has just placed its biggest-selling product on a list of environmental hazards, it may not be immediately obvious to The bank's loan officer or an environmental auditor hired for a phase I site assessment.

DAY TWO

**SESSION TWO:
DUE DILIGENCE PROCEDURES**

Mark King, EBRD

EUROPEAN BANK ENVIRONMENTAL DUE DILIGENCE PROCEDURES

AN OVERVIEW

INTRODUCTION

The European Bank's & Environmental procedures set out the institution's & approach to environmental due diligence. They have been designed to ensure that the projects which the Bank finances meet the mandate requirement that the Bank will "promote in the full range of its activities environmentally sound and sustainable development" (*Agreement establishing the EBRD, 1991*). This mandate has been interpreted to apply not only to direct investment and lending by The EBRI but also to the investment and lending activities of its partner Financial Intermediaries (FIs) in the 25 countries of operation.

About one third of the Bank's funds are presently channelled through FIs. In order to effect its environmental mandate, The EBRD requires that FIs carry out environmental due diligence (EDD) on the lending and investment activities financed using EBRD funds in a manner satisfactory to the Bank. The FIs' environmental procedures vary according to the nature of their activities and are not to be confused with the Bank's own Environmental Procedures. In this presentation, we give an overview first of the EBRD's own environmental procedures and then of the environmental requirements that the Bank's financial partners must address.

EBRD'S ENVIRONMENTAL PROCEDURES

The Bank conducts EDD on all its potential investment and technical cooperation projects. The environmental requirements for these projects vary, depending on the nature of the project, The potential for environmental impact, the proposed use of Bank funds, potential environmental liability or risk associated with past or future operations, conditions

for worker health and safety, opportunities for environmental improvements, and other related issues.

EDD is conducted at the same time as financial due diligence. It is essential that the investigations or information requirements on a proposed project are addressed early in the project's cycle, so that the environmental requirements will not cause delay in The project approval process. Often environmental investigations uncover problems or potential liabilities which must be taken into consideration during negotiations and for which further studies, or comprehensive environmental management plans must be developed.

The Bank's environmental procedures are not limited to managing the Bank's exposure to environmental risks and liabilities. They also serve the purpose of identifying environmental improvements and investment opportunities which may go well beyond achieving compliance with local regulations or good management practice. For example, global environmental benefits, such as a reduction in greenhouse gas emissions, may be achieved through the choice of cleaner technologies or energy efficiency measures. If appropriate, the Bank's environmental staff explore the availability of grant or "soft" finance to meet the incremental costs of addressing some types of environmental investments, particularly related to past activities, e.g. through the Project Preparation Committee established within the Environmental Action Programme for Central and Eastern Europe.

Approval process

There are, essentially, three stages in the Bank's EDD process:

1. Assembly of sufficient environmental information on which the Bank can judge whether a project will satisfy the requirements of the Bank's environmental mandate;
2. Identification of any design changes, and/or environmental conditionality or covenants needed

in the legal agreements based on the appraisal of information submitted;

3. Monitoring of the implementation of environmental control and enhancement measures.

The Bank's project approval process comprises several stages, as described below, at each of which environmental actions may be taken.

Concept Clearance

The concept of the project is presented to senior management for approval so that preparatory work can begin. No environmental information has to be submitted for this purpose. Following Concept Clearance, the project team supply details of the proposed project to the Bank's Environmental Appraisal Unit (BAU). This information should highlight any potential environmental concerns of which the project sponsor is aware.

Initial Review

The environmental specialists in EAU review the preliminary information and the description of the project, identify the potential environmental concerns and opportunities typically associated with such projects, and define the investigations that will be required. Typical requirements are the need to carry out an environmental audit or an environmental assessment (EA), and to ensure adequate participation of the affected public in the EA process. The Bank does not use a rating system to quantify environmental risks. Projects are "classified" into categories NB/C and 0/1 to indicate whether a full, partial or no EA is required, and/or whether an environmental audit is needed. This classification is made after all requirements are defined (rather than classification triggering certain requirements). An Environmental Screening Memorandum summarising EAU's requirements is incorporated in the documentation presented to the Bank's senior management at the time that they undertake the Initial Review of the project.

Project Preparation

If the project passes Initial Review, the environmental investigations need to be carried out. The work is always the responsibility of the Project Sponsor, but the Bank can assist, where necessary, in the preparation of consultancy Terms of Reference for environmental studies and in the identification of short lists of environmental consultants. If properly integrated in the overall due diligence process, environmental investigations should not delay the project approval process within the Bank. EAU staff may visit project sites to examine at first hand existing environmental conditions.

Final Review

Following an analysis of the results of the environmental investigations, the environmental specialists prepare an Environmental Review Memorandum (ERM) which is incorporated in the documentation presented to senior management at the time of Final Review. This details the environmental mitigation and enhancement measures that need to be incorporated in the project design, draws attention to any environmental information still required, and highlights outstanding environmental issues needing resolution. The information included in The ERM also forms the basis of any environmental conditionality or covenants which need to be included in loan or subscription agreements in order to translate the outcome of the EDD into legal obligations.

Board Approval

The project documentation that is presented to Board of Directors for their approval includes a section on the project's environmental implications and summarises the outcome of the environmental investigations undertaken on the project.

Project Monitoring

The monitoring of the client's environmental performance is essential to ensure the effective implementation of The Bank's environmental

mandate. In addition to the regular financial reports and general information on project implementation which clients must submit to the Bank, EBRD uses a number of specific environmental reporting requirements such as: annual reports on environmental and worker health and safety matters; submission of the results of periodic self-monitoring (e.g. water quality, testing for specific substances); or periodic independent environmental audits through the life of the loan. In addition, The Bank reserves The right for site visits to be made by its own environmental specialists for monitoring purposes. The Bank will normally include a requirement that the client immediately notifies the Bank in the case of any incident or accident relating to the project and likely to have a significant adverse effect on the environment or worker health and safety. An important element common to all provisions is that the client will be asked to describe the steps taken or proposed to address any problems in the areas reported.

ENVIRONMENTAL PROCEDURES FOR THE BANK'S FINANCIAL INTERMEDIARIES

Types of FI Operations

The Bank works with various Financial Intermediaries (FIs), including banks, regional, sectoral and country Funds, insurance firms and leasing companies. Environmental risks associated with FI projects depend mainly on the nature of the loan/investment, and on the Bank's involvement in the FI's decision-making process. Both can vary considerably.

On some occasions, the Bank's funds may be used exclusively for short term trade financing, stand by facilities, or bank-to-bank loans which may be totally fungible. EBRD finance is also fungible where the Bank takes equity in local banks, funds or insurance companies. However, as a major shareholder/investor, EBRD usually has representation on the Board of the FI and can therefore influence the investment/lending strategy of the institution. The Bank may, in some cases, also have rights of veto on investments and loans.

In other FI operations, the Bank's funds may be used to finance specific investment projects. In some operations, each FI sub-project, at least initially, requires prior approval or sign-off by The Bank. Examples include (i) agency lines with (western or eastern) banks which have a strong representation in one or more countries of central Europe and which act as financial agents of the EBRD in those countries; and (ii) apex lines, mostly in Former Soviet Union (FSU) countries, where the Bank's funds are on-lent through local participating banks (PBs) selected according to strict criteria. The financing activities of The PBs are administered by an apex unit, usually a state financing institution.

The Bank is actively involved in developing additional innovative financing mechanisms which act as vehicles to address The needs of transition economies, in particular the Small and Medium Sized Enterprises (SME) sector. For example, in its Special Restructuring Programmes, the Bank, through specially created holding companies, makes majority investments in selected state-owned enterprises which, with the appropriate restructuring and financial and management assistance, have the potential to become viable and competitive enterprises that can be divested into the private sector.

Environmental Due Diligence Requirements for FIs

The great diversity of FI operations does not allow a blanket approach as to the type of EDD to be carried out by FIs. However, the following basic requirements are common to virtually all FI operations:

1. The FI will have to develop and implement environmental procedures acceptable to the Bank and integrate them as fully as possible into its credit/ investment appraisal procedures.
2. The FI will have to comply with the Bank's *Environmental Exclusion List for FIs*. This list includes activities prohibited by international environmental agreements or where the Bank

considers indirect financing inappropriate because of the significance of associated environmental risks.

3. The FI will have to submit to the Bank periodic (usually annual) reports on the implementation of its environmental procedures

The development of environmental procedures that suit a specific FI and are, at the same time, acceptable to The Bank, is a key aim of EBRD's environmental specialists. The procedures adopted by the Bank's financial partners have to be pragmatic, effective and well-integrated into the FI's overall operational procedures so as to avoid unnecessary delays in the credit appraisal process.

As start-up assistance, EAU has developed, for different types of FIs, guidelines for the development of environmental procedures. These guidelines outline the different steps in the environmental due diligence process and provide a number of supporting tools, such as easy-to use environmental risk checklists, sample formats for conducting EAs or environmental audits, a regulatory compliance questionnaire and guidance on the selection of environmental consultants. The guidelines, however, then need to be tailored to suit the characteristics of each individual FI. The following factors will be taken into account:

- Sire/organisational structure of the FI
- Nature of investment/credit appraisal process
- Type of transactions undertaken by the FI. This may range from retail banking to long-term project finance
- Size of the FI's loan portfolio
- Environmental risks and liabilities associated with the investment portfolio (grocery shops or mining projects?)
- Existing environmental policy, if any
- Past environmental performance of FI and its major client base

Difficulties and constraints

The FIs often experience considerable difficulties and constraints when attempting to meet the Bank's environmental requirements. These may include:

- Limited availability of technical and financial resources both in the FI and the country.
- Perceived reduction in competitiveness in the local financial environment if environmental conditionality is imposed.
- Inadequate time within the time frame of transactions to conduct environmental due diligence.
- Weak implementation and enforcement of environmental regulations by regulatory authorities.

The Bank is well aware of these difficulties, and its environmental specialists provide direct assistance to FIs on a day-to-day basis, including visits to FI offices where appropriate. In addition, the Bank has adopted several measures to assist its FIs in developing and implementing environmental procedures and to transfer appropriate environmental due diligence skills to local environmental experts who can provide services to the FIs, among others.

EBRD Initiatives to Support EDD by FIs

Some FI operations, such as the apex lines, include a substantial technical assistance component for capacity and institution building in all key areas of the FI's operations, including EDD. In addition, the Bank has adopted the following specific initiatives to support the EDD activities of its FIs:

Technical support for the Development of EDD Procedures within FIs

The Bank has established, with funds from the European Commission, four framework contracts with environmental/ management consultancies who will assist individual FIs in developing tailor-made

environmental procedures, prepare sub-sectoral environmental guidelines and other due diligence tools, train staff, gather information about relevant environmental regulations, identify contacts in local environmental authorities and evaluate the local environmental services sector vis-à-vis the provision of EDD services to FIs. Fully consistent with the case-by-case approach described above, this initiative aims at ensuring the effective implementation of acceptable environmental procedures by FIs. The project benefits from the experience gained during an earlier technical assistance project supporting the development of EDD procedures in a newly established private sector investment bank.

Financial Intermediary Environmental Training Project

A series of four day workshops, funded by the European Commission, were held in 1993 for FI staff, local environmental experts and regulatory agencies in Hungary, the Czech and Slovak Republics, Estonia, Latvia, Lithuania, Romania, Bulgaria and Poland. During the workshops, training was provided on the Bank's environmental procedures. Environmental auditing of an actual plant was conducted for training purposes. The project has proven particularly valuable for the creation of a network of qualified environmental consultants in CEE. It is now being extended to other countries of the Bank's operations, notably in the CIS region (financed by the Japanese government).

Bankers Environmental Training Project

The aim of this project, funded by the Japanese government, was to develop an environmental training course which can be incorporated into the curricula of bankers training institutes in Central and Eastern Europe. As a first stage, a survey of environmental policies and procedures was conducted in Western banks to identify useful lessons and approaches. Based on the findings of the survey and discussions with interested parties, an environmental manual has been prepared to support future training programmes. A pilot training

programme was conducted in Hungary in 1993 with The International Training Centre for Bankers in Budapest.

Investors Guidebooks on Environment, Health & Safety

The Bank, with funding from the European Commission, is managing several technical cooperation projects to prepare practical, user-friendly guidebooks summarising the environmental and health and safety regulations in its countries of operation. The first guidebook, covering 9 central European countries, was published in 1993 and has proven to be a valuable tool for the Bank's FIs. A second series of guidebooks covering The remaining eastern European and FSU countries is presently under preparation.

Monitoring the Implementation of Environmental Procedures

The cornerstone of the Bank's monitoring of FIs is the requirement to submit periodic reports on environmental matters, in particular related to the implementation of the environmental procedures, including any difficulties and constraints experienced by the FI in this respect. The Bank may also request further environmental information and/or conduct monitoring visits to selected FIs. In addition, where the EBRD is represented on the Investment Committee and/or Board of an investment fund or local bank, the FI's adherence to its environmental procedures can be monitored through the Bank representatives.

Finally, where individual sub-projects require EBRD's approval before funds are disbursed, the Bank is able to monitor each sub-project's compliance with environmental requirements. This may result in the refusal of loan applications on environmental grounds, pending The satisfactory outcome of environmental investigations.

Co-operation with other International Financial Institutions

EBRD is closely working with other International Financial Institutions (IFIs) such as the International Finance Corporation (IFC) or the Overseas Private Investment Corporation (OPIC) on the development of EDD requirements and guidelines for co-financed projects. EBRD environmental staff have started to establish a regular dialogue with their counterparts in other IFI's to exchange information and co-ordinate capacity building initiatives with a view to harmonise approaches to EDD requirements and procedures for FIs. The Bank intends to continue to play a proactive role in this respect, given the importance of intermediated financing in the Bank's countries of operation.

How to Obtain More Informatton

The Bank's Environmental Procedures can be obtained from:

The Documentalist
European Bank for Reconstruction and Development
One Exchange Square
London EC2A 2EH
United Kingdom

More information about environmental requirements for FIs can be obtained from:

Mark King Tel: +44.71338.7203, Fax: 338.6848
Alke Schmidt Tel: +44.71.338.7717, Fax: 338.6848

Bradford S. Gentry
Managing Partner
Morrison & Foerster

**UNEP Round-table
Financial Services and the Environment
Due Diligence Procedures**

Bradford S. Gentry
Morrison & Foerster (London)

- Core Mechanisms For Identifying And Managing Environmental Risks
 - What Risks Face This Transaction?
 - How Significant To The Deal Are They?
- Wide Variations In Due Diligence Process For Different Types of Deals
- Look At The: Key Elements Of Environmental Due Diligence Special Issues That Arise In Different Contexts
- Consider How Environmental Due Diligence Should Develop Over Time

Due Diligence: Key Elements

- A Process Of Collecting Information
- On The Environmental Risks Facing Financial Transactions
- Occurring In May Different Contexts
- So Can Assess Level of Environmental Risk Posed To A Transaction
- And Decide What Risk Management Action To Take
- Look At Each Element And Special Issues Raised

Information Collection Process

- First Issue: Scope Of The Due Diligence Investigation
- Depends On Context Of Particular Transaction
 - Type of Deal – Recourse/Non-Recourse Loan, Equity Investment
 - Type of Security – Real Property, Receivables, Shares, Guarantees
 - Term of Loan
 - Type of Borrower – Commercial, Industrial
 - Number And Location of Assets – Single/Multiple Jurisdictions Developed/Developing Countries
 - Timing/Sensitivity of Deal
- Need Basis For Determining Scope Up Front And Re-Evaluating As Proceed

Information Collection Process

- Choose Team:
 - In House, External Consultants/Lawyers
 - Breadth of Expertise –
 - Technical, Legal, Other
 - Local Knowledge vs. Consistency
 - Contractual Arrangements, Insurance
- Amounts of Available Information Constantly Expanding
- Wide Variety of Sources:
 - Borrower, Government, Commercial Vendors
 - Potential Sensitivities – Government Contacts
- Wide Variety of Collection Techniques:
 - Questionnaires, Record Reviews, Database Searches, Interviews, Visual Inspections, Sampling – Will Vary By Location
- Recording of Findings:
 - Report By Team – “Just The Facts”
 - Confidentiality of Reports – Borrower’s, Lender’s
 - Use/Disclosure of Findings –
 - By Borrower, Lender

Environmental Risks

- What Environmental Risks Should Be Investigated?
- Starting Point For Many Lenders: Liability For Contaminated Land Clean-Up
- Impacts On: Value of Real Property
Collateral
Borrower's Revenue
Direct Lender Liability
- Due Diligence With Both Management And Legal Importance Here
- US Superfund Law Has An "Innocent Purchase" Defense For Site "Owners"
- Superfund Reform May Add Broader Defenses For: Prospective Purchasers
Lenders
- These Defenses Require That "Appropriate Inquiry" Be Taken Prior To Purchase

Environmental Risks: Appropriate Inquiry

- "Appropriate Inquiry" Not Defined In Superfund Statute Or By Courts
- "ASTM" Has Offered Guidance With Government Support
- Environmental Site Assessment Standards For:
"Transaction Screens" – Minimum Level Of Inquiry, "Red Flag" Review
"Phase I Assessments" – More Detailed Review By Environmental Professional
Due Diligence Standards For Fiduciaries Being Developed
- Clear Focus:
Establishing Defense To US Superfund Liability
By Providing Process To Follow
- Approach Should Be Relevant Elsewhere: Dutch Law, EU "Green Paper"
- However, ASTM Standards Cover Only Limited Range Of Environmental Risks

Different Contexts

- Other Environmental Risks May Well Need to Be Investigated
- Depends on Context Of Particular Transaction
- Need Tailor Specific Due Diligence Procedures To These Different Contexts And Risks:

Borrower's Revenues – Compliance, Claims, Management Systems
New Projects – Siting, Permitting, Public Reaction, Changes in Law
Markets For Products – Policy Trends, Alternatives
- Key Issue: Building The Institutional Competence To Do So
- Build On Readily Available Checklists and Tools (ASTM, Others)
- Develop Capacity For Judgment Calls:
What Information Do We Need?
How Much Information Is Enough?
- Requires: In House Staffing And Training
Knowledge And Efficient Use of External Resources

Risk Assessment

- Once Information Collection Process Nears Completion
- Need Quantify Risk Posed and Determine Significance To Deal
- Still An Inexact Science, Though Improving With:
Collective Experience – Costs of Addressing Risks, Calculation Methods
Other Quantification Requirements – Disclosure of Contingent Liabilities
Developments In Environmental Accounting
- Need Share Quantification Techniques And Still Compete
- Once Know Level Of Risk, Can Take Steps to Manage:
Transaction Structure
Contractual Protections
Insurance
Monitoring
Other Techniques

Environmental Due Diligence: Future Agenda

- Procedures For Core Real Property Due Diligence Becoming Routine:
Need Collect And Disseminate Techniques
Expand Use As Way To Define Limits Of Clean-Up Liability
- Expanding Environmental Risks Require Expanded Due Diligence Capacity
“Traditional” Developed Country Risks Moving To New Locations
New Risks – New Environmental Issues, New Approaches to Addressing
Tracking Of Policy Trends In Addition To Transaction Specific Risks
Build In-House And External Capacity
- Quantification Of Risks Is Key To Managing Them:
Build On Collective Experience
Develop And Disseminate Quantification Techniques
- Ultimate Goal: Integration Into General Commercial Risks Normally Considered

DAY TWO

**SESSION THREE:
INTERNAL OPERATIONS AND
ENVIRONMENTAL PERFORMANCE**

Hilary J. Thompson
Head of Environmental Management Unit
National Westminster Bank

EXECUTIVE COMMITMENT

NatWest's executive team has encouraged the development of the Group's environmental responsibility programme. NatWest's Chairman and Group Chief Executive are both involved in a wide range of environmental initiatives. At main Board level, the environmental programme is led and directed by the Group Chief Executive, Derek Wanless.

Environmental issues are one of the standing items which may be reviewed by him during regular meetings with the Chief Executives of the Group's business sectors. NatWest's environmental responsibility programme is, therefore, sponsored at the highest levels.

Environmental Management Unit (EMU)

The Environmental Management Unit is located within the Office of the Group Chief Executive (OGCE) and supports the Chairman and Group Chief Executive, providing advice on policy and strategy. EMU represents the Group at national and international level including seminars, conferences and working groups. As with other key strategic issues, the Group framework, broad targets and the general direction of the environmental programme are determined within OGCE in conjunction with the business sectors. Monitoring the achievement of the targets, the Group's overall performance, and the development and implementation of the environmental responsibility programme provide the main focus for EMU's internal activities. In addition EMU is responsible for internal and external communication of the Group's environmental performance, achievements and future plans.

Environmental Management Structure

The Head of EMU reports directly to the Group Chief Executive. Each of the Group's business sectors has a Senior Sector Executive (SSE) with

environmental responsibility answerable to the sector's Chief Executive. The SSE is responsible for execution, development and delivery of the sector's own areas of the environmental programme.

The SSEs meet in a regular forum to anticipate and resolve any potential problems with the implementation of policy. Furthermore, their meetings can provide input to and refresh the policy making process. As each sector is different in terms of customers, activities and geographic location, the precise structure selected to manage their internal programmes varies accordingly. However, in all cases, a manager at operational level co-ordinates the sector's programme, liaising with environmental representatives in each of the operational units.

Resourcing

There are six full-time staff in the Environmental Management Unit and three full-time positions in other units. Additionally, across the Group there are numerous other staff who have environmental responsibility as part of their day to day activities.

The process of continuous improvement has led to a number of changes to the way in which we conduct our affairs. Examples of these can be found in internal publications such as the NatWest Group's Energy Efficiency manual, the booklet 'Guidance on the Selection of Materials in Group Property', as well as in the environmental guidelines produced by Group Purchasing.

The NatWest Group's environmental responsibility programme

The NatWest Group believes that banking is a business like any other to which the maxim "Environmental Sense, Business Sense" applies. With this in mind, in 1990 the Group established its Environmental Management Unit, formulated an initial environment policy and began a programme of environmental responsibility consisting of action on business opportunities and threats, risk appraisal and internal practices.



Business opportunities and threats

We pursue the business opportunities offered by the environment and manage the risks posed by it, taking full account of the environment in the management, planning and operation of our business.

Risk appraisal

NatWest considers the direct and indirect impacts that environmental issues may have on its lending portfolio. Our policies and practices take due account of environmental risk when assessing lending propositions.

Internal practices

In July 1993, NatWest published its first Environment Report, the first public comprehensive report by any financial services company. The Report provided a summary of the findings of the Group's initial two-year environmental audit of its internal practices. The findings confirmed our belief that environmental sense and business sense are closely linked. We now have in place our environmental management system, designed to monitor our progress against our chosen environmental policy goals, objectives and targets.

The future

NatWest welcomes the discipline of regular reporting and has already made it a mandatory annual activity for the NatWest Group.

Every three years, an environmental audit will be conducted across the Group and the results will be published in an external report. The next audit will take place in 1995. In each of the intervening years, a Report will be published updating internal and external stakeholders on the progress made during the year. It will specifically mention progress towards goals and targets and implementation of the Group's Environment Policy.

The Group's environmental management system provides for regular reviews of best practice. These reviews set overall Group best practice targets. However, each business unit will move towards achievement of targets at a speed which takes full account of the market in which it operates and the performance level from which it began.



DAY TWO

**SESSION FOUR:
PUBLIC FINANCE AND PRIVATE-PUBLIC
SECTOR PARTNERSHIPS**

THE ENVIRONMENTAL INTERFACE

Campbell Thomson

**Technical Advisory Service, European
Investment Bank**

**The European Investment Bank and its
Financial Intermediaries**

INTRODUCTION

In this talk, I will briefly introduce the European Investment Bank (EIB) and its commitment to environmental issues, before moving on to consider the specific topic of the environmental interface between the EIB and its financial intermediaries.

The Bank is established by Article 4b of the Treaty of Rome, as amended. Its object is defined by Article 198e. Its shareholders are the Member States of the European Union. It is a non-profit-making international banking institution, having its seat in Luxembourg. Its task is to provide, by way of long-term loans at the finest market rates and against adequate security, finance for investment projects for developing the regions of the Community and, in general, for all investment projects of Community interest. 10% of its current activity supports EC policy of financial "co-operation with African, Caribbean, Pacific and Mediterranean countries, the countries of Eastern and Central Europe and others. It has gross assets valued at some 100 billion ecus, on which it earns an annual surplus of some 1000 millions ecus. It raises most of its funds on the international bond markets, where it is among the most active issuers.

EIB'S ENVIRONMENTAL COMMITMENT

EIB's AAA rating and privileged access to international capital markets, rests ultimately upon its commitment to the lasting viability of the investments it chooses to support. Long-term viability presupposes sustainability in technical, financial, economic and environmental terms. These aspects cannot be separated : environmental soundness reinforces overall viability.

Each project submitted for direct financing by the EIB is screened by multidisciplinary project teams comprising financial analysts, engineers, economists, who carry joint responsibility for the consequences of their recommendations, the engineers are specifically charged with the systematic review of the environmental impact at all project stages, from preparation through monitoring during implementation and eventual ex-post evaluations.

The scope of the environmental screening is determined first on the basis of EU legislation. All projects requiring a full Environmental Impact Assessment (EIA) with public participation necessarily undergo this type of examination. When EIA is optional under this legislation, it is nevertheless required when imposed under national legislation or whenever it is felt that it can lead to an improved project design. For that purpose, investments are scoped mainly according to their type or sector, their size, the technology, and their location. Investment located in or near protected areas under international or national law, and these set aside for potential preservation under the Union's Corine programme are systematically excluded from EIB financing or subject to special mitigating measures. For EIA purposes, environmental screening goes beyond the impact on strictly ecological and natural assets and include social effects and cultural heritage. Projects are defined so as to include related investments in terms of their wider geographical and sectarian impact over time. The EIB pays strict attention to projects with potential for cross border pollution. Oceans, streams, air as well as migrating animals and endangered species are shared resources whose protection requires an international approach.

While the EIB cannot be held responsible for the inappropriate use of the future facilities it helps financing, it verifies the promoter's environmental record and ensures that the specifications of the new investments allow the promoter to respect pollution limits set by existing or forthcoming EU legislation, or more advanced national legislation. The aim is to persuade promoters to use the most advanced and cost effective technology. In cases of rehabilitation or

take-over of existing facilities, the EIB requires an environmental audit.

Sustainability is synonymous with adaptability. Promoters sensitive to environmental issues are believed to have the long term vision required to adapt their business according to a changing surrounding. While promoters are screened on that criteria at the project appraisal stage, monitoring of ongoing projects enables the EIB to ascertain that initial specifications are implemented according to the agreed technical description which is part of its financing contracts. Regular evaluations of actual project performance helps the EIB update its procedures, in particular with regard to environmental scrutiny.

For reasons of operational efficiency, the EIB does not handle small and medium-sized investments directly. It finances such projects indirectly on co-operation with national and regional banks, and with financing institutions under its global loans scheme. These are lines of credit that strengthen the resources of banks to meet the long term financing needs of their small and medium-sized customers. The EIB concludes such arrangements with intermediaries which are capable of applying its own lending criterias, including those on environmental screening. Intermediaries are required to submit projects, which fall into environmentally delicate sectors, to the EIB for preliminary approval.

In view of the growing importance of environmental issues in EIB business, an environmental specialist will develop global and procedural matters and assist in training staff, while individual responsibility for environmental screening of projects will remain with the appraisal engineers since external environmental audits of EIB's record on the environment have so far confirmed the validity of this approach.

FINANCIAL INTERMEDIARIES

With a total staff of just over 800 to handle 23 B.USD the EIB clearly can only handle large projects. To address smaller investments it makes extensive use of Global Loans: lines of credit made

available to suitable financial intermediaries both inside and outside the Union. Within the Union these intermediaries are normally commercial banks or finance houses – and there is at least one commercial bank present with an EIB line of credit. Outside the union there is a split between purely commercial banks and para-statal organisations such as development banks. Funds are only used for productive investments – for the ultimate beneficiaries these are commercially priced loans which have to be repaid – but more importantly they are a lubricant to allow the capital and financial markets in these countries to start moving. This naturally leads to a review of the interface between the EIB and its financial intermediaries outside of the European Union.

THE PROBLEM

The EIB is committed to the environmentally sensitive use of its funds. The problem is to ensure this message is understood when Global Loans are given to financial intermediaries, particularly outside the Union. If the aim is to encourage these intermediaries to develop and stand alone then they must, as soon as possible, be given authority to manage the EIB's funds by themselves. How, therefore, can the EIB assure itself that these intermediaries are capable of handling environmental issues and how can it seek to ensure that environmental issues will receive proper attention?

THE EIB SOLUTION

What the EIB has tried to do is develop a methodology, based on its in-house procedures, which can be applied by intermediaries with, or without, their own in-house technical expertise. The aim is twofold. Firstly, the procedure should highlight potential problems. Secondly, the application of the procedure should encourage the development of the institution's standards and abilities. This should lead to the recognition of environmental issues as being important not just in their own right, but as being an important element of a sustainable development process.

A three stage process is proposed;

1. Setting the baseline standards
2. Putting the project into context
3. Analysing the impact

Considering each in turn:

Baseline Standards

Six standards are outlined. These are discussed with the intermediaries but they represent our minimum standards and we expect all intermediaries to adhere to them.

- *No unacceptable long term damage to the natural environment.*

Obviously the question of what is unacceptable has to be discussed but the crucial point is whether or not the Intermediary and the Ultimate Beneficiary accept the concept.

- *Clear plans for making good any short or medium term damage (related costs to be included in the project).*

Many projects have an environmental impact during the project's lifetime with full recovery afterwards. However there must be adequate funds available (and assured) to be able to carry out the recovery process.

- *Best available technology not entailing excessive cost.*

This another slightly woolly concept but it is counter-productive to set standards and hurdles too high.

- *No environmental damage at any stage in the life-cycle of the project's output unless there are real social or environmental advantages at some other stage.*

There is often a trade off in environmental impacts between the production process and the product. To take a simplistic example: wood pulp plants can be environmentally poor - but the product is readily recyclable and bio-degradable, a plastics processing plant has little direct environmental

impact but the disposal of consumable plastics is still a problem.

- *Projects have to meet the country's existing, and planned, laws standards, norms, etc.*

This is usually not a problem - but there is the thorny issue "should third world production facilities meet European environmental standards?"

- *An Environmental Impact Assessment (EIA) is needed for large projects with potentially serious negative environmental impacts.*

Generally speaking the EIB's Global Loans do not cover large enough projects for this to be a problem. However in theory the standards applying here are those which apply in Europe under EC Directive 85/337.

PROJECT CONTEXT

Some projects, ab initio, are highly unlikely to have an environmental impact. This is well known to the EIB but the intermediaries have to be aware of it too. However, they have to be encouraged to recognise the limited scale and scope of such projects. For this reason a project categorisation is presented with projects falling under one of three headings. This approach and the actual categories are similar to those of a number of other multilateral funding bodies:

A Large projects in potentially hazardous sectors.

These need a full EIA. Most Intermediaries will not be involved in this type of project but the Bank can supply guidelines on appraising the quality of EIA's if required.

B Projects which might have a negative environmental impact. Most SME projects will fall into this category. Environmental issues need to be analysed and reported to the Bank.

C Projects which are unlikely to pose a risk to the environment. No analysis is needed but the Promoter must confirm that the project is environmentally acceptable.

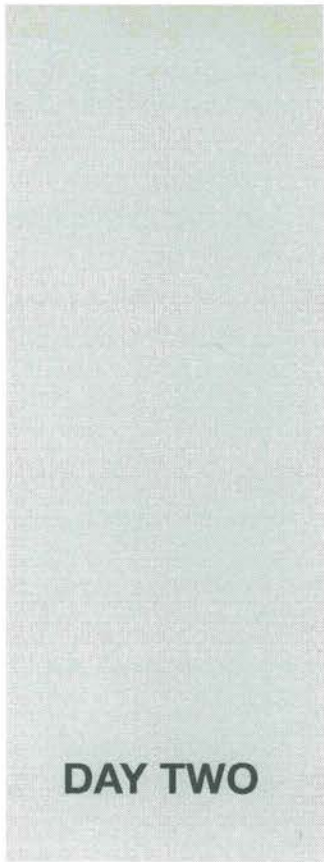
For categories A and C lists are provided of what are and are not an acceptable projects. However, these lists cannot be comprehensive and the Intermediary has to develop their limits to suit their particular trading activities.

ANALYSIS

The environmental laws and controls of some countries are new or undeveloped and many financial intermediaries, are not used to handling environmental issues. To help, the Bank has prepared an environmental summary sheet (Appended), complete with a detailed instructions and questions to be asked before it can be filled in. The aim is for intermediaries to use this until they have developed their own in-house environmental appraisal procedures.

CONCLUSION

The EIB's aim is not to be prescriptive towards its intermediaries. Minimum standards are set and guidance and procedures are available but the belief is that it is better to encourage sustainability through example and understanding than through rote requirements and compulsion. The encouraging word rather than the commandment.



DAY TWO

**SESSION FIVE:
OPPORTUNITIES FOR PUBLIC-PRIVATE SECTOR
FINANCE IN THE ENVIRONMENT**

G.A. Sedee

NETHERLANDS BANKERS' ASSOCIATION

This afternoon, I would like to discuss Green funds in the Netherlands; whether or not they have been successful and how the Government is promoting private investments in the environment.

But first, I would like to express my views on what I have learned these past two days.

So far during this meeting, we have been prompted to take environmental issues very seriously and to incorporate the environmental policy into the company policy. The issues of climatic changes is evidently of special interest to those of us who live below sea-level in the "lowlands".

We have also been warned not to become environmental policemen and to oppose the concept of lender liability (minimal risk).

Where does this leave a bank?

I would say that it puts us in a difficult position.

On the one hand, banks do have a responsibility and should not refrain from making every possible effort that could lead to a sustainable future.

On the other hand, banking, a very traditional field of business, has never been known to be a forerunner and has to make money for its shareholders.

This brings me to a question that was raised this morning. What additional evidence could be supplied to banks to show them that they will benefit from paying attention to the environment? Maybe, at least in banking, the question should be: what additional evidence is needed to prove that our current way of handling things is wrong. In this context it might also be wise to recall the number of banks that are not present here today, and all the banks that did not participate in the two surveys that were mentioned yesterday.

Please do not misunderstand me, I am not

contradicting anything we heard during the past few days. On the contrary, I agree with most of it. I only intend to give those who are not quite familiar with it a clear and honest picture of the banking industry.

Turning to the public/private financing of the environment, it will not surprise you that I am emphasizing the traditional roles of both bankers and the public sector.

A banker will aim to make a profit on any deal he concludes and would be considered out of his mind if his main concern was for the environment. Therefore, if a certain environmental project is not likely to create a substantial profit, it is the task of the government to make it attractive to investors for some other reason.

However cynical this may sound, without some kind of incentive the vast majority of citizens and enterprises will not voluntarily spend money on the environment. Maybe this will change in the future, but history has shown that long-term goals are very hard to sell.

Of course, punishment is a most effective incentive. Yesterday we were shown that new legislation is laying down more rules concerning environmental issues than on any other area.

Returning to the field of investments, it is a relief to note that until now no law has been implemented that commits investors to invest their money in some way or another.

Another kind of incentive is therefore needed. A solution might be to reward the kind of behaviour that is being aimed for.

On the issue of green investments, the Dutch government has most recently put this kind of incentive into practice.

In recent years only a few "green funds" have been established in the Netherlands. Despite the enormous attention to environmental issues during the past decade, green funds have not been able to attract more

than 300 mln guilders. This is less than 1 percent of the total amount of private investments. Most recently, one of the mayor green funds was even ended.

One of the bottle-necks which is hampering the growth of green funds concerns the difference between normal and green investments. Actual practice has shown that investments in environmental projects are at least 2-3 percent less profitable. This may very well be the reason why only a few banks in the Netherlands and almost none of the major ones included a green fund in their portfolio. Only niche-players have so far been operational in the field of green funds.

Another less expected bottle-neck concerns the difficulty in finding environmental projects in which to invest. Partly because the term green investment is still not clearly defined, partly because of aforementioned low profitability-prospects, the total market for green investments is less than might be expected. This lack of options for green investment becomes apparent by looking at the portfolio of the individual green funds. Often no less than 50 percent of their assets is held in liquidity.

Another reason for the small amount of green funds might be that a growing number of green investments is kept "invisible": companies turn to their own bank for a loan, no matter what purpose is intended. In this way, green investments lose their colour, something which I personally welcome. Environmental investments should indeed become as regular as any other kind of investment.

So far I have been discussing the private sector. Turning to the public sector, the Dutch authorities have developed two instruments to promote green investments.

As of 1995, interest and dividend from green investments will be exempted from taxation. Green in this context refers to investments in wind energy, biological agriculture, and the preservation of nature.

If sufficient investors are interested, the banks will soon follow by introducing green funds, and they may even start searching for specific green

investments. Of course, it remains to be seen whether this tax advantage will induce many people to invest in a green fund. In view of the 'narrow' definition of 'green' in this context, it is also questionable whether banks will introduce new green funds.

The second means of stimulating green investments is the creation of a green-mark (Ecolabel) for green investment funds. And although currently only items such as refrigerators and toiletpaper can receive this official environmental approval, it will be interesting to see whether the main Dutch banks in particular will apply for a greenmark on green funds that still have to be introduced. Either way, I am sure that no other country in the world has developed an ecolabel for green funds.

Because the above-mentioned government measures still have to be introduced, it is too early to make any predictions with regard to the extent to which green investments will rise. The government has certainly made every possible effort and now it is up to both the banks and the investors.

Charles Di Leva
SENIOR COUNSEL
LEGAL DEPT, ENVIRONMENTAL AFFAIRS
THE WORLD BANK

MOBILIZING THE PRIVATE SECTOR

During 1994, the World Bank Group made headway in mobilizing private sector support for actions consistent with GEF global environment protection objectives. A formal agreement was signed between the Bank and the International Finance Corporation (IFC), the Bank's private sector affiliate, to collaborate in fulfilling the Bank Group's role as an implementing agency for the GEF. The IFC has begun to develop a pipeline of prospective private sector activities which use GEF resources to leverage private investment in the developing countries serving *inter alia* GEF purposes.

THE EFFECTS OF THE INTERNATIONAL ENVIRONMENTAL CONVENTIONS ON BUSINESS

The private sector is a major polluter and user of non-renewable natural resources. But businesses can also use natural resources in a sustainable or environmentally sensitive manner. The global environmental problems recognized by the Conventions (Framework Convention on Climate Change, Convention on Biological Diversity, Montreal Protocol on Substances that Deplete the Ozone Layer) will not be solved unless the private sector contributes its vast technical, managerial, and financial resources and expertise.

Participating countries have expressed a desire to expand the role of the private sector in the GEF. Although the amount of GEF funds will be small relative to the enormous costs of addressing global environmental concerns, the GEF could play a catalytic role by leveraging private sector investments to meet GEF objectives. As an example of the potential, the International Finance Corporation (IFC), the private sector affiliate of the World Bank Group, in FY 1994 invested \$2.5 billion of its resources to finance projects with a combined investment cost of \$15.8 billion.

The leveraging of private sector investment will occur when GEF or MP funds are granted or loaned directly or indirectly to private sector companies and enterprises for the "incremental costs" of undertaking projects with global environmental benefits. These projects might not otherwise attract sufficient investment or might not attract investment until much later because of the extra costs or risks of including global environmental considerations. For example some private sector sponsors might be unable to attract sufficient commercial financing for renewable energy projects in developing countries because project development costs are too high or expected rates of return are too low (or risks too high) in comparison to traditional coal-fired power plants.

What will drive or entice companies to participate in a GEF or MP program? There are regulatory (meeting government requirements), financial (grants, co-financing), strategic (access to new business opportunities), and public relations reasons for businesses to work with the GEF and MP. The constraints and opportunities posed by the Conventions are outlined in this issue. Subsequent issues will focus on ongoing and new activities aimed at encouraging private sector investment in projects with global environmental benefits.

BIODIVERSITY

Constraints: The business implications of the Convention on Biodiversity will depend on how the provisions of the Convention concerning protection of species and habitats, intellectual property rights, technology transfer, government control of biodiversity resources, and developing country access to the outputs of biotechnology are implemented by the Parties to the Convention. In general, more and more governments, multinational institutions, and companies are implementing environmental policies that affect biodiversity resource use and trade. The World Bank Group's forest, wildlands, and indigenous peoples policies, for example, cover many aspects of biodiversity preservation. Many countries restrict trade in endangered species; some veneer mills and retail

companies will not use and some countries have put bans on imports of tropical hardwoods.

Opportunities: The desire to create economic incentives to use biological resources sustainably and a growing demand for products derived from sustainable development practices are creating business opportunities, including:

- **Timber from sustained forest management.** Companies are seeking wood certified by NGOs as coming from sustained forest management. A variety of companies are undertaking selective logging, plantations of mixed tropical hardwoods, and value added manufacturing targeted to preserving biodiversity.
- **Alternative and sustainable agriculture.** Practices which use low or no man-made inputs, promote genetic diversity in crops, and restore soil fertility are used in a range of agricultural businesses. The largest organic growers trade association, the Organic Crop Improvement Association, reports 20,000 members in Latin America and US and European organic requirements will be unified by the end of 1995, creating a de facto world organic standard. Other practices with ties to biodiversity enhancement are aquaculture of local species to take pressure off wild stocks (fish, crocodiles, turtles), and farming of underutilized species.
- **Non-timber products from forests and wildlands (NTFP).** Products include resins, essential oils, edible oils, plant gums, gubers, nuts, fruits, dyes, insects, and insect products, latex, ornamental plants, spices, and handicrafts. The majority of NTFP projects are managed by NGOs, cooperatives, and other community groups. While this sector remains small and fragmented, opportunities exist for starting factories near forests and providing equipment for processing NTFPs and marketing and brokering companies.
- **Biodiversity prospecting (pharmaceuticals and other industrial products from plants and animals).** This sector is in the early stages of

development. Several local and regional startup companies tied to local research institutes are beginning to search out and process extracts. Opportunities exist for developing new plant based products with agricultural applications and commercializing traditional medicines. Challenges include the lack of developing country infrastructure, high drug approval costs in the US and Europe, and a variety of questions about indigenous and intellectual property rights.

- **Ecotourism.** Lodges and tour operators market leisure, adventure, and educational activities associated with travel to protected and undisturbed natural areas. The world ecotourism market is already \$238 billion per year according to one estimate and growing at 20% per year. Ecotourism societies and governments are developing needed guidelines for operating and certification standards.

CLIMATE CHANGE

Constraints: The Framework Convention on Climate Change (FCCC) may eventually require ratifying industrialized and developing countries to implement policies to limit or reduce greenhouse gas (GHG) emissions for several reasons.

- **The 1990 level target for OECD countries and countries of Eastern Europe and the former Soviet Union** must be met by capture and disposal of GHG emissions, fuel switching, energy efficiency, or investment in emissions reductions in other countries (carbon offsets).
- **Political pressure is being applied by some governments and NGOs** on multilateral finance institutions to consider the effects of GHG emissions in projects requesting financing. The World Bank Group environmental guidelines indicate that projects should “minimize possible adverse effects on the global environment.” Future co-financing of coal-fired thermal power plants, for example, are likely to require special attention to GHG emissions and to consideration of renewable energy and energy efficiency alternatives.

- **National plans required by the FCCC** may set priorities for projects, such as power projects, that will affect business (although the plans may require many years to develop).

Opportunities: Government and multinational institution policies in response to the FCCC give the private sector additional reasons to invest in cleaner fossil fuels, renewable energy, energy efficiency, natural gas/petroleum industry efficiency and flaring reduction, electricity production and transmission loss reduction, mass transit, and reforestation. Many of these activities are already economically feasible or would be with government policies that allow private production of electric power, adopt marginal cost energy pricing, and promote energy conservation. In some cases, it is difficult for some of these projects to compete with large coal-fired power plants: the project development and institutional costs are often higher for several smaller projects than for one large project generating (or saving) the same amount of power. Also efficiency and loss reduction activities require investments in management, training, and consumer awareness. GEF can provide grant funds to overcome these “incremental costs”.

MONTREAL PROTOCOL

Constraints: While most developing country signatories do not have to eliminate the use of CFCs in the near future, eventually they will have to under the terms of the MP. These constraints may directly affect companies in developing countries. The MP provides an incentive to developing country companies to adopt and produce CFC-free products. The advantages of becoming a party to the MP include financial and technical assistance through the Multilateral Fund for the MP (MFMP), transfer of the latest technology, and the maintenance of access to world markets. The disadvantages of not participating in the MP include the inability to import controlled substances from parties after January 1, 1993 (thus making it difficult to service existing equipment), closed access to world markets because parties are to ban the import of products containing controlled substances after May 2, 1993, and

difficulties in obtaining new technologies. Companies in some developing countries are taking actions to switch to non-CFC products unilaterally, under national government programs or with the assistance of MFMP grants. The World Bank and IFC can assist companies to switch to non-CFCs with the assistance of MFMP grants, to the extent that viable technologies can be adopted.

Opportunities: The accelerated implementation of the MP has been made possible by the availability and further development of substitute chemicals and technologies. Producers of CFCs, CFC substitutes, and products that use CFCs and other ODSs, sensing a burgeoning new market, moved fast to develop replacements. Products like refrigerators are being redesigned not only to be CFC-free but to be more energy efficient. Thus the MP has been one of the key factors spurring a new generation of coolant, aerosol, refrigeration, and insulation products. Westinghouse, for example, won a \$30 million grant (“golden carrot”) from a consortium of American utilities to develop a CFC-free/energy efficient refrigerator and European companies are beginning to market a variety of CFC-free refrigerators. Developing country producers of white goods, cooling equipment, and insulation materials are beginning to produce CFC-free products for export (where such products may already be required) and domestic consumption. Technologies to recycle CFCs in existing uses are also needed.

MOBILIZING THE PRIVATE SECTOR

This section presents a paper authored by Ken Newcombe, ENVGC and Michael Rubino, IFC, with assistance from Michael Williams of the UNEP World Meteorological Organization.

AN EQUITY FUND FOR RENEWABLE ENERGY AND ENERGY EFFICIENCY

Controlling global emissions of greenhouse gases is going to be expensive. Unfortunately, there is not going to be enough additional new money from official sources to fund all the worthwhile emission-reduction projects.

One solution to this problem would be to channel private capital towards such projects via an international equity investment fund. The IFC may soon undertake a study to assess the feasibility of a private equity or venture capital fund that would invest in renewable energy and energy efficiency projects in developing countries.

This fund would invest in wind, solar, geothermal, small hydro-power, biomass, and ocean-thermal energy projects. It would also consider projects that conserve energy use or supplies, as well as other energy projects that make financial, environmental and technical sense when compared to more conventional alternatives. The chosen projects would either promote new technologies or help existing proven technologies to penetrate new markets. Some projects may involve transactions that are too small to be attractive to existing sources of investment.

These projects would lead to lower greenhouse gas emissions than would alternative projects, and the fund's investment would support the objectives of the Framework Convention on Climate Change.

GOALS AND BENEFITS

A number of trends bode well for a more level playing field that will enable energy conservation and renewables to compete with traditional energy sources on the basis of fair technological, financial, economic and environmental comparisons.

To start with, the Climate Change Convention and the related national response plans should encourage energy planners and other decision-makers to place a greater reliance on renewables and efficiency. Other international agreements and country- and local-level issues should also make climate change and related environmental concerns more prominent.

Meanwhile, regulatory reform in the energy sector is progressing. More and more countries are adopting laws and regulations to eliminate subsidiaries and encourage integrated resource planning and privatization. These measures will attract more private sector investment to efficient energy products.

As a result, a growing number of renewable energy and energy efficiency projects are being implemented in developing countries. Many more are seeking financing. There appears now to be an opportunity for a private equity fund to catalyze investment in renewable energy and energy efficiency projects by providing leadership and helping to mobilize capital (including project development funds) that could be combined with funds from other investors.

Selecting Projects

The fund would blend private sector capital seeking competitive returns with concessional funds from foundations and donors. The presence of concessional funds or grants would ensure that private investors could expect a rate of return that is comparable to other international equity funds.

The concessional investors would be willing to earn a below-market rate of return because they are motivated by other concerns. For example, OECD countries might consider an investment in such a fund to be GHG insurance. Or the GEF Council might support the fund's objective of attracting private capital by, say, funding the costs of certifying and verifying that GHG mitigation has indeed occurred. The fund managers would choose projects in developing countries that met the following investment criteria:

Cost-effective reduction of GHG emissions compared with the alternative investment if the fund's resources were not applied.

Use of commercially proven technologies for renewable energy or energy conservation that result in low or no GHG emissions.

Satisfaction of project appraisal and the normal due diligence evaluation required by equity capital investors, including such indicators as the project sponsor's financial resources and experience in managing the particular business, plus a market assessment and profitability analysis and other assurances regarding the project's legal, policy and remuneration aspects; and

Consistency of host government strategies for

environmentally sustainable development and/or environmental action plans, and acceptable physical and social environmental impact standards.

The fund's managers would have to measure the cost-effectiveness and success of the project in reducing GHG emissions. They would do this by identifying and applying universally acceptable scientific standards and analytical methods for estimating and monitoring carbon-equivalent emission reductions to each investment. They would then certify for fund shareholders the emissions reduction achieved and the unit costs of abatement, and verify and update the certification of emissions reduction for the investment portfolio in the fund's annual reports.

The Link to Global Initiatives

While the proposed fund would make investments that support the objectives of the GEF and the Climate Change Convention, it would have no formal legal association of any kind with either of them. It would not generate or purport to sanction any carbon offset that could be registered under the Convention or which would somehow be interpreted by government as a contribution under a joint implementation (JI) program or any other negotiated obligations entered into under the Convention. Nor would it require any resolution on action of any kind by either the Parties to the Convention or the GEF Council in order to operation.

The proposed fund could, however, make some indirect contributions to the Convention's implementation. In lieu of a Convention agreed incentive structure arising from limits on global atmospheric carbon emissions, the fund could act as a catalyst to mobilize private sector resource and public sector concessional financing. In this way it could demonstrate the value of private sector investment in low or zero emissions technologies.

The fund could also provide the Conference of the Parties without prejudice to its ongoing deliberations and eventual decision – a valuable demonstration of the process for analyzing, certifying and verifying

projects with a commercial component. This would be useful should the Parties eventually agree on JI arrangements or on emissions reduction targets that would generate an international trade in carbon offsets.

The Fund would:

- Bring together the growing network of intermediaries in the private, NGO and government sectors to lower transaction costs and accelerate win-win private sector investment in energy efficiency projects.
- Combine resources from the public and private sectors to accelerate the adoption of sustainable energy production and use.
- Invest in developing country projects that benefit the international community by cost-effectively reducing GHG emissions.

DAY TWO

**PANEL DISCUSSION:
INCREASING PRIVATE-PUBLIC SECTOR COOPERATION**

Alfred Musiał

**DIRECTOR, SECTORAL ANALYSIS AND
FORECAST DEPARTMENT
BANK HANDLOWY W WARSZAWIE S.A.**

**HOW TO FIND NEW METHODS IN FINANCING
ENVIRONMENTS VENTURES WITHIN THE NEWLY
ESTABLISHED CENTRAL AND EASTERN EUROPEAN
MARKETS**

1 Current situation on environmental protection in Poland

The quality of the environment in Poland is detrimental in consequence of one-sided economic growth in the previous years, resulting in considerable deterioration natural environment in certain areas of the country, in particular in places where intensive industrial activities have concentrated and urban growth took place. Highly

polluted regions include: Baltic shore, Upper Silesia industrial region, The Sudety Mountains on frontiers with the Czech Republic and Germany, and vicinity of the old Polish capital – the city of Kraków. Polish experts have distinguished 27 ecologically endangered regions of Poland, specified in the figure below. Their total area is 11% and population 33% of Poland.

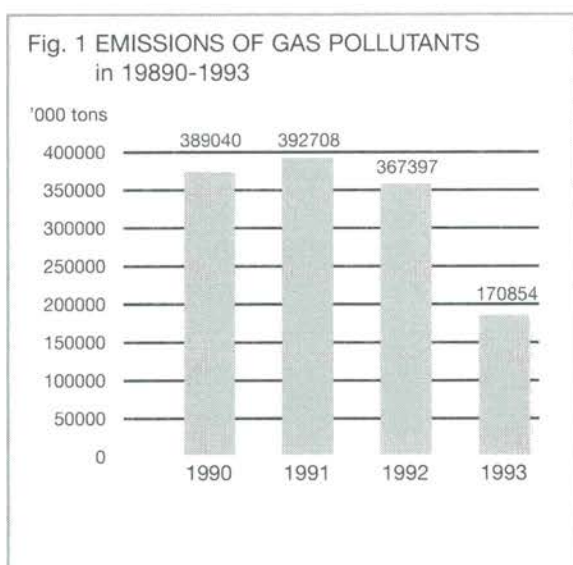
At the same time, our country still has the so rare elsewhere in Europe primeval natural regions almost untouched by man, with all their wealth of flora and fauna, e.g. Bieszczady Mountains in the south-east of Poland.

Generally, however, Poland remains behind countries of the European Union in protecting its environment. This is clearly seen from the high emissions of sulphur dioxide, nitrogen oxides and other greenhouse effect gases, in the high degree of degradation in rivers, lakes and other water reservoirs, in the large quantities of industrial and municipal waste produced. Incidence of civilisational diseases is increasing and the average life span has decreased in our country.



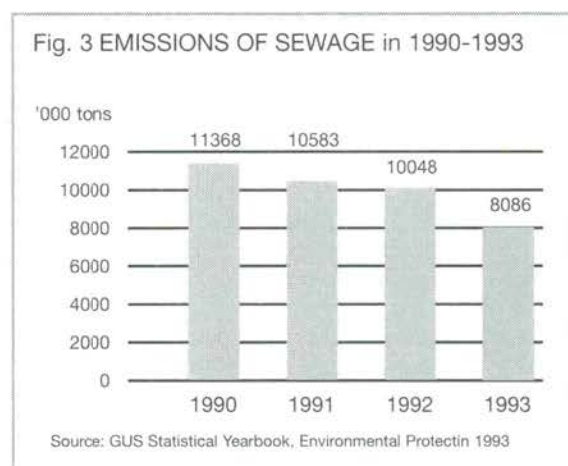
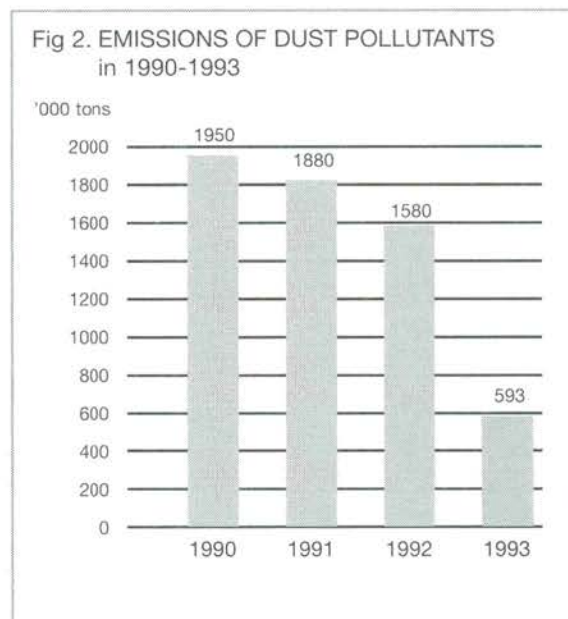
2 Transformation of the Polish economy vs. environmental protection

The period 1990-1994 has witnessed not only fundamental economic transformations leading to a market economy, but also reduced ecological degradation in Poland. Gas emissions have decreased from 389.04 Mln tons in 1990 to 166.704 Mln tons, i.e. by 57.2%. Dust pollution decreased over this period by 69.6%, liquid waste discharge by 28.9%. Hard coal mining decreased from 177.6 Mln tons in 1989 to 130.5 Mln tons in 1993.



There have been many causes of reducing pollutant discharge, but two of them have had major impact.

1. Decrease in national product and industrial production caused by movement towards a new economic system. While different in its intensity and duration, it took place in all countries moving from centrally administered economy to a market driven one. Particular decrease in production was reported in: production of hard coal, iron smelting, cement, artificial fertilisers – all having a pronounced influence upon the environment.



2. Considerable effort is undertaken in environmental protection. With the decreasing GNP and need to reduce budgetary outlays for several socially important sectors, our expenditures for environmental protection have been continuously increased, reaching PLZ 15,100 Bln in 1993, i.e. 2% of the GNP. 95% of those funds were derived within Poland and 5% through foreign assistance programs.

But, environment management cannot be reduced to financial issues, alone. An important role has been played here by systemic changes and introduction of

better mechanisms of managing the environment, new legal solutions, growth of the ecology movement, co-operation with developed countries, etc.

The concentration of spending in the hands of the state and public authorities has played a special role in environmental protection. Most of the funding is derived from domestic sources in the form of fees and fines paid by companies for using the environment. Those constituted some two-thirds of all funding allocated to environmental protection in Poland in 1992. Budget and para-budgetary ecological funds were spent as subsidies and preferential interest loans (accruing interest a 0.2 to 0.8 of market rate) from the banks. Although considerable progress has been made, experts still consider the environment to be unsatisfactory. This is particularly true for water and air. We are convinced that measures taken during the past five years and, in particular, the concentration of financial resources and their spending allocated for environmental protection in hands of the state authorities were needed and effective. Thereby, we have addressed our most urgent infrastructural needs. However, this effort was unable to overcome the many years of underdevelopment in environmental infrastructures and firstly the economic and social barriers posed by one-sided structure of our economy, based on hard coal and energy-consuming industry.

Efficient transformation of our economics, restructuring of mining, energy, smelting and other heavy industry sectors will have to be done before Poland enters the path of balanced economic and ecological growth.

3 Dilemmas of the future

Poland today is at cross-roads. The existing subsidy and preferences system is rapidly reaching its extreme. Capabilities of further increasing centrally available funds have almost been exhausted. The increasing roles of commune administration and local self-governments has diverted existing funds to increasing activities in infrastructural investments such as sewage treatment plants, waste dumps, etc. However, the key issue of pro-ecological restructuring is being deferred to a future time.

Centrally planned decisions and allocation of financial resources for environmental purposes has contributed to the weakness of Polish ecological markets. Particularly the small and medium sized ecological ventures have been dominated by state and para-state funding, e.g. from the National Environmental Protection and Water Economy Fund or by the Voivodship level environmental funds. This has diminished the activities of other financial institutions, including commercial banks.

However, pressures towards the integration of environmental factors into economic considerations for pro-ecological is mounting, caused by the economic revival of our country as well as by Polish plans to enter the European Union. This requires a review of the existing legislation to adapt it or standards prevailing in the EU. Agriculture will become issues of particular importance in Poland in this respect. Polish experts have calculated that solely adaptation of the domestic energy sector to contemporary environmental requirements will incur spending exceeding today's total outlays for the environment. Major investments will have to take place in installations to desulphurise effluent gases to reduce SO₂ emissions to the atmosphere. Spending of USD 20-25 Mln per one 200 MW power unit, e.g. USD 150-200 Mln per large power plant is envisaged.

Loans for such investments may be granted in Poland only by large commercial banks and event these will have to form syndicates to avoid legal lending limit constraints imposed by the Polish Banking Law.

4 Role of commercial banks, including Bank Handlowy in Warsaw S.A. on the environmental protection market

As representatives of a large Polish commercial banks we have to admit that it is not only competition from budgetary credit lines which deters us from involvement in implementation of ecological ventures. Other reasons:

- Lack of expertise in Polish banks in providing

loans for ecological investments. Such investments were never previously considered attractive (low returns) for the banking sector. Today, they are still considered by the banks as bearing high financial risks;

- Insufficient expertise of Polish banks in environmental legislation. Polish ecological laws are new, still have many gaps giving grounds for different interpretations, thereby increasing financial risk.
- No explicit procedures for applying ecological criterions in assessment of investment projects financed through banks have been established.

We consider that large commercial banks can significantly reduce their financial risk and broaden their loan portfolio when certain requirements will be met, mainly:

- permitting commercial banks access to budgetary funds allocated to cover costs of preference in opening credit lines to ecological investments
- establishing credit guarantee institutions and ecological risk insurers.

Other requirements have to be met by the banks. These include:

- developing and implementing a strategy for dealing with pro-ecological investments.
- initiating and maintaining regular contacts and other co-operation measures between banks and state administrative and local environmental protection authorities such, to enable review of documents submitted by borrowers as to their correctness and reliability.
- developing and implementing accurate banking procedures treating ecological risk as an integral portion of bank risk
- training bank employees responsible for loans in legal problems associated with environmental protection.

- widening inter-bank co-operation in organising syndicates for joint financing of large pro-ecological projects.

The approach taken by Bank Handlowy w Warszawie S.A. in respect to investments requiring long-term financing may be characterised as follows:

Preliminary phase:

- assessment of the business performed by the applicant in respect to the sector
- concluding whether the enterprise is included into the list of companies most seriously affecting the natural environment (developed by administration function)

Depending on the conclusion, three financing scenarios are available in the *Loan Phase*:

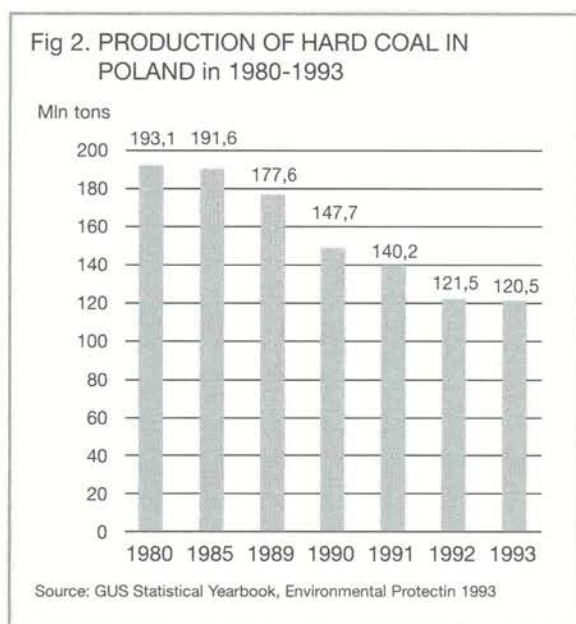
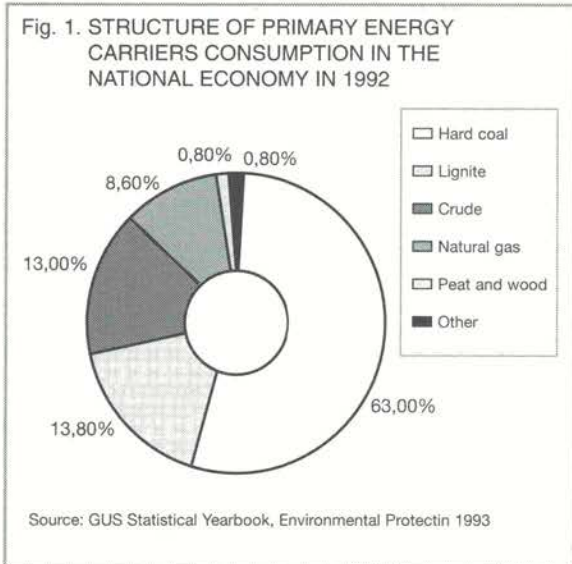
- full ecological assessment of the enterprise
- partial ecological assessment (production line, department, etc.)
- waiving ecological assessment

This procedure takes place between the local branch of our bank and the business entity. Detailed analysis and review are performed by the Bank's Credits Committee which is responsible for opining all major commitments of the Bank. One of the Committee's members representing the Bank's structure and responsible for ecology participates.

The final decision is a function of the Bank's staff; knowledge of the ecological laws prevailing in Poland today and anticipating its changes over the next several years is of crucial importance. Of course, the ability of the customer to repay the loan with interest has to be included.

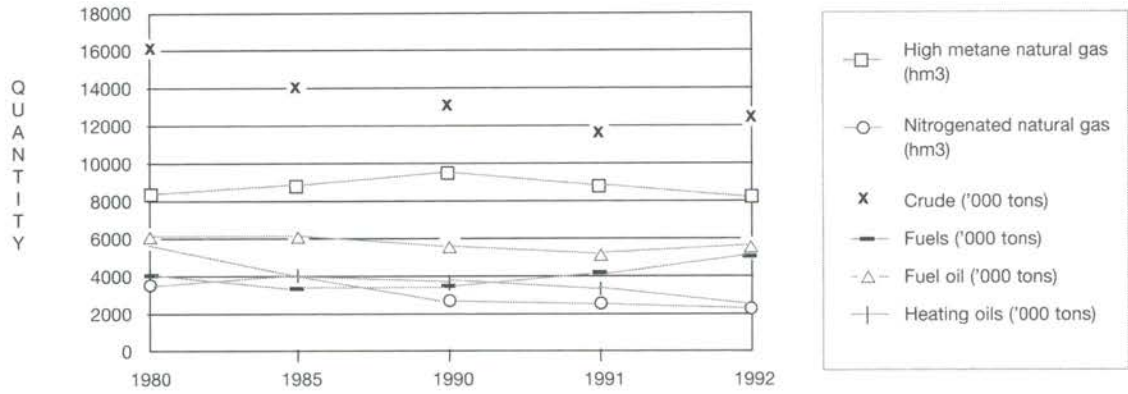
5 Final remarks

Our participation in this UNEP conference additionally evidences the importance we attribute to international co-operation in this respect. It is our



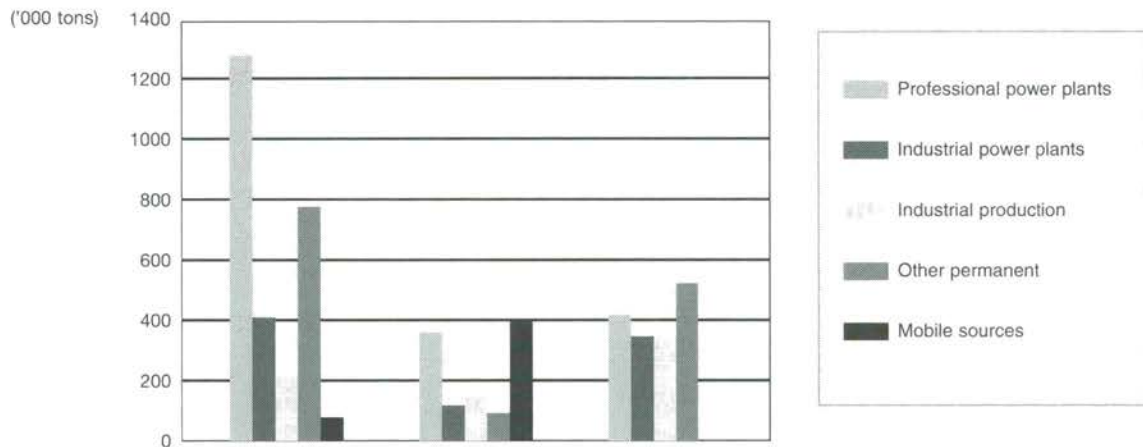
opinion that co-operation between international financial *institutions* (such as the World Bank and International Financial Corporation) and Polish banks in co-financing investments may facilitate the co-ordination of their mutual efforts, particularly in supporting assistance programs. Often only such co-operation leads to optimum implementation of such assistance projects.

Fig. 3 CONSUMPTION OF BASIC FUELS IN THE NATIONAL ECONOMY



Source: GUS Statistical Yearbook, Environmental Protection 1993

Fig. 4 STRUCTURE OF MAIN AIR POLLUTANT EMISSIONS IN 1992



Source: GUS Statistical Yearbook, Environmental Protection 1993



APPENDIX ONE

United Nations Environment Programme

The United Nations Environment Programme (UNEP) was established in 1972 by the General Assembly of the United Nations. As the environmental agency of the UN, its mandate is to “safeguard and enhance the environment for the benefit of present and future generations.” UNEP’s Earthwatch programme, for example, uses satellite data and aerial photography, in tandem with a world-wide network of on-site data collection points. Activities gather, collate and distribute environmental data. Every two years, UNEP, in collaboration with the World Resources Institute and the U.K. Department of the Environment, publishes the Environment Data Report. UNEP produces specialized data reports, about freshwater management, atmospheric pollution, marine pollution, environmental management, energy, education and training and other issue areas.

Another major focus of UNEP’s work is environmental law, both at the international and national levels. Of the approximately 180 international environmental agreements which exist, UNEP has brokered roughly one-half, including the Montreal Protocol, Basel Convention, Convention on Biodiversity, and the London Guidelines. UNEP’s Industry and Environment Office works closely with industry in developing technical guidelines, environmental management systems; cleaner production technologies; life-cycle analysis and life-cycle management. Among the publications of the Industry and Environment Office is the quarterly *Industry and Environment Bulletin*, as well as a technical series, which includes Environmental Auditing and Hazard Identification and Evaluation in a Local Community.

Since 1991, UNEP has worked with the commercial banking sector on environmental issues. In 1992, UNEP facilitated the drafting and endorsement by some 30 commercial banks of the UNEP Statement by Banks on the Environment and Sustainable Development. Today, approximately 70 commercial banks from developing, transitional, and industrialized economies have endorsed the Statement. UNEP hosts an Advisory Group to the Executive Director of Banks and the Environment. Membership as of March 1995 includes Bank of America, Bank Handlowy, Credit Suisse, Deutsche Bank, European Bank for Reconstruction and Development, International Finance Corporation, National Westminster, Ghana Commercial Bank, Royal Bank of Canada.

For more information about UNEP’s work, please write:

UNEP Environment and Trade
15, Chemin des Anemones
CH-1219, Chatelaine
Geneva, Switzerland

Environmental Risk and Commercial Banks:
Discussion Paper

August 1994

Prepared for UNEP Round-Table on Commercial
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Prepared by Scott Vaughan, UNEP

Environment and Trade/Environment and
Economics Unit
United Nations Environment Programme

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INTRODUCTION

ENVIRONMENTAL RISKS AND COMMERCIAL BANKS

DIVERSITY OF ISSUES:

- In June 1994, a Union Carbide plant in California became the first to sell “pollution credits” for nitrogen oxide emissions. The value of the sale: 3.4 million credits for \$US1.2 million. The purchaser, a glass manufacturing company, was able to buy extra credits to meet emission targets under the newly established State of California tradable emissions scheme.
- According to the British Antarctic Survey, recent observations have indicated warming trends 10-times faster than previous rates. Scientists have raised alarm about the effects of pollution on climate regimes, warning of the “absolute proof” that climate change is underway.
- In June 1994, the Canadian timber industry agreed to an 80 percent increase in stumpage (cutting) fees to the British Columbia government. Expected new revenues: C\$2 billion.
- An April 1994 study by the University of Chile concluded that \$435 million is lost each year, mainly through health problems linked to high air pollution levels in Chile.
- In March 1994, US insurance and industry reached agreement to establish the Environmental Insurance Resolution Fund of up to \$8.1 billion, for coverage of waste dumped prior to 1986.
- According to a June 1994 report by the U.S. EPA, Energy Department, the Coalition on Superfund and Chevron, Superfund clean-up costs over the next 30 years could exceed \$1 trillion.
- Recent estimates suggest that the global market in waste management is estimated at \$90 billion per year, and some forecasters – eyeing stricter standards – predict that will jump to \$500 billion by the year 2000.

- In March 1994, doctors from 11 countries ruled that the potential claims of 400,000 people adversely affected by the Union Carbide Bhopal disaster were “genuine.”

- In June, 1994, a federal court jury found Exxon responsible for reckless operations in connection with the oil spill. Exxon faces civil claims for damages from as many as 13,000 plaintiffs: damages may exceed \$15 billion. This is in addition to the estimated \$3.5 billion Exxon has already spent on clean-up operations, following the oil spill involving the *Exxon Valdez*.

- In February 1994, Indonesia announced plans to begin rating the environmental performance of companies, with results of environmental audits made available to banks, insurance companies and foreign investors.

- In June 1994, former employees at an electric transformer in Massachusetts filed a lawsuit against General Electric and Monsanto Chemical Corp., claiming that long-term exposure of PCBs and other carcinogens had affected their health. Similar lawsuits are expected to be launched elsewhere, with claims expected to run into tens of millions of dollars.

- In June, 1994, the United Kingdom Atomic Energy Authority estimated that clean-up costs for decommissioned nuclear power plants in the U.K. could exceed £8.2 billion.

The above examples highlight some recent issues which fall under the rubric of “the environment.” They underline the huge diversity of issues related to the environment; the highly dynamic nature of the companies involved in the production and marketing of environmental goods and services; and the enormous risks associated with the environment.

An increasing amount of work is being done involving industry, governments, international organizations, academics and citizens groups, to find new solutions to worsening environmental problems. While the future course of regulations is in an

important period of transition, there is no doubt that environmental indicators show that ecological deterioration is accelerating, and expanding.

In recent years, more and more commercial banks, as well as bankers' associations, are becoming involved in environmental issues. There are two main reasons.

One, as an area of increasing economic importance, prudent lenders are keeping track of major regulatory and other developments which affect the asset value of existing borrowers, and which offer potentially new investment markets.

Two, commercial banks remain concerned about potential liabilities which they may encounter, either from direct or indirect environmental liability. Of these, the issue of direct lender liability continues to overshadow the intersection of commercial credit and environmental issues.

There are welcome signs that this is changing. Recent developments, such as agreement on an environmental insurance scheme in the US, or proposed EC conventions seeking to clarify lender exemptions in liability issues, are signs that the deadlock which surrounds lender liability may be easing.

It is important that it does so, given the evidence that lender liability has prompted lenders to strengthen legal positioning against potentially unfair liability exposure, while at the same time diminishing the amount of finance available via debt and equity finance to begin the huge task of cleaning up pressing environmental problems and investing to prevent new ones.

From both an environmental and an economic perspective, uncertainty over lender liability is proving to be counter-productive. New solutions are needed which engage the financial services sector. Such solutions might include increased leveraging of public-sector finance in new investment projects, coupled with secured lender exemptions for future liability. These kind of scenarios need to be examined. At the same time, liability needs to be

clarified and strengthened, whereby owners and operators responsible for pollution are held accountable, under the Polluter Pays Principle approach.

The purpose of this discussion paper is to provide lenders – particularly lenders that have recently begun to address environmental issues – with a “snapshot” of some key issues. It begins with an overview of current and projected expenditures, employment figures, and types of activities, which fall under the rubric of environmental protection.

EXPENDITURES AND EMPLOYMENT

Expenditures linked to environmental management give some idea of its growing economic clout. A 1993 report of the United States General Accounting Office (GOA) estimated that, since 1970, U.S. government and industry have spent more than \$1 trillion complying with environmental regulations.

By the year 2000, U.S. expenditures to meet current legislative requirements will exceed US\$160 billion per annum, or 2.8 percent of GDP (1986 dollars.)

Most other OECD countries have similar regulatory compliance current and forecast expenditures, while many developing countries are allocating more resources to environmental protection.

Environmental investments are also playing an increasingly important role in transitional economies. A recent UN survey, for example, estimated that 40 percent of environmental technologies produced were destined for emerging markets in the Asia Pacific region.

It is now clear that environmental issues have shifted from regulatory issues to big business. In Canada, for example, an estimated 4,500 small, medium and large-scale companies, employing 150,000 people, are involved in the environmental sector. The Canadian domestic market for environmental goods and services – ranging from waste management technologies to pollution filters – is estimated at \$11 billion per annum, of which \$5 billion stems from the

services sector, and \$6 billion from the manufacturing sector.

In the U.S., annual investment in energy efficiency is estimated at £1.3 billion, employing 80,000 people in the energy sector alone.

In Germany, over 750,000 people are now directly employed in environmental products, services and protection. Anticipated expenditure in the European oil sector for environmental is \$10 billion.

According to the *Environment Business Journal*, the market for environmental services in Western Europe was \$94 billion (1992). Estimates put the growth of European environment sector at approximately seven percent per annum. Already, an estimated 16,000 environmental firms operate in Europe: over one-half are small businesses, with annual sales of less than \$2.5 million.

Increasingly, larger firms are entering such environment-related markets as waste reduction, end-of-pipe scrubbers, waste treatment facilities, and other technologies. In retro-fitting and abatement technologies, for example, larger firms, such as Fläkt (part of the ABB group) and Lurgi (part of Metallgesellschaft), are dominant players.

Future expenditures on pollution reduction and waste clean-up underline the longer-term, high-growth prospects. The World Bank, for example, estimates that \$38 billion per year will be needed to begin comprehensive clean-up operations in the Asia Pacific region. Current expenditures on environmentally-related products and services in the East Asian economies are doubling every ten years.

PUBLIC CONCERN

Explanations for the steady economic ascent of the environmental agenda include: the scientific discovery of new environmental risks over the past decade, as well as clarification of health risks associated with chemical and other contaminants.

However, the most compelling reason is an

unwavering public demand for environmental quality. Environmental issues have been, and remain, a serious public concern, shared by both developing and developed economies.

In a recent survey of 24 developed and developing countries (conducted by the George Gallup International Institute), public concern about the environment ranked very high. When asked to rank environmental quality, for instance, a large majority thought the global environment was "very" bad or "fairly" bad.

That characterization cut across economic lines: in Poland, Chile and Russia, for instance, 88 percent rated the global environment in these categories. In Germany and Switzerland, the figure was 86 per cent; in Canada, 79 percent; in United Kingdom, 76 percent, in Uruguay, 74 percent, and in Mexico, 70 percent.

WILLINGNESS TO PAY

Such strong public concern about environmental quality is a long familiar issue to policy-makers. Yet, what is "new" about environmental issues is the translation of concern into bottom-line, market trends. In the same Gallup Institute survey, a majority of people in most countries said that they would pay higher prices for better environmental quality.

In Denmark, the figure was 78 percent; in South Korea, 71 percent; in the United Kingdom and Switzerland, 70 percent. A July 1994 survey by EDK Associates found that 63 percent of female consumers in the U.S., for instance, said that they looked for green-labelled products, because of high levels of environmental concern.

This willingness to pay is reflected in many market-based initiatives. These include greater public acceptance of various fiscal policy instruments, including pollution taxes, special charges, and other market-based instruments. The OECD estimates that economic instruments to help achieve environmental objectives have either doubled or tripled in the last five years.

Another, less clear example of willingness to pay is the increase in national eco-labelling schemes, intended to provide concerned consumers with information about the environmental characteristics of products. To date, an estimated 25 different national eco-labelling schemes have been launched, or are being developed.

For lenders, these two trends alone are of considerable importance. Expanded use of fiscal policy instruments will have important implications to borrowers – particularly in natural resource extraction and pollution intensive sectors – in terms of creating new systems of incentives and disincentives.

Increased use of eco-labelling schemes, coupled with the development of new international standards under the International Standards Organization and proliferation of increasingly focused industry codes of conduct, are all of direct relevance to lenders, in terms of identifying companies and products with good environmental performance standards. Such information is also highly useful to lenders in helping to determine due diligence procedures.

This discussion paper, to be used as a background note for the UNEP Roundtable on Banks and the Environment (held 26-27 September 1994) is divided into the following sections:

Section One provides information on potential risks to lenders and discusses selected national cases and industry responses to lender liability issues.

Section Two provides information on general trends in environmental command and control and market-based approaches to environmental management. Information on selected national approaches to environmental issues is also provided.

Section Three provides information on general trends at the international level, including the development of voluntary industry codes of conduct; recent initiatives under the International Standards Organization; and an overview of some international environmental legal instruments.

Section Four provides information on trends and tools in the environmental agenda of interest to lenders. Included is information on green mutual and other funds; industry initiatives in waste reduction and cleaner production; and current issues and initiatives related to environmental accounting; environmental impact assessment; environmental auditing; and corporate environmental reporting.

The final section provides some concluding remarks on the need for stronger partnerships involving the financial services sector and an overview of some of the acute environmental problems which make those partnerships more compelling than ever.

SECTION ONE: RISK AND LIABILITY

INTRODUCTION: PAYING FOR THE MESS

Legislation related to the clean-up of contaminated lands and sites is of key importance to industry and industry creditors. As pressure to finance environmental remediation grows, some legislators have unfortunately looked to the financial services sector as a potential source of funding for cleaning up the environmental damage inflicted by their borrowers.

Accordingly, the most compelling reason why lenders are concerned about the environment is direct liability. Although progress has been made, uncertainty over this issue is counter-productive. In an understandable effort to shore up legal defenses against potential lender liability, important opportunities involving partnerships with the financial services sector are being missed, in areas as diverse as debt for environment swaps, the financing of joint implementation, etc.

The issue of direct lender liability continues to create uncertainty, a perception of unfairness and an increasingly defensive posture on the part of many banks. In an industry which, more than most, covets predictability and stability, several fundamental questions related to contaminated site clean-up remain unclear. In the words of a former U.K. Secretary of the Environment, those questions include: *Who pays? How much? When? Who decides? How clean is clean?*

From an environmental perspective, it is clear that a growing backlog of severely contaminated properties must be addressed. It is also clear that responsibility for remediation must be assigned fairly, and with transparency. As almost all national bankers' associations argue, the application of the Polluter Pays Principle is the first-best option: in site remediation.

However, environmental policy more often than not has to contend with second and third-best options. New solutions, such as the creation of a liability fund

in the US, or the pooling of resources for environmental insurance in the Netherlands, are preferable to across-the-board lender liability. The threat has already been counter-productive from an environmental perspective: it creates a powerful disincentive to debt and equity finance to be involved in clean-up operations desperately in need of additional capital.

.....

Following the Fleet Factors decision, an American Bankers' Association survey found that 62.5 percent of U.S. community commercial banks rejected loan applications or potential borrowers because of possible environmental lender liability.

.....

There is a need for more certainty and predictability in clean-up legislation. And there is a need for countries in which legislation is quickly taking shape – especially in privatization and related legislation in Eastern and Central Europe – to avoid the mistakes of past approaches, and to seek new partnerships involving public-private sector leveraging of finance for remediation and other environmental goals.

In light of the scarcity of pollution liability insurance, for example, lenders in many industrialized countries have gone to considerable length to second-guess what might constitute thorough procedures for due diligence. This is reflected in a mushrooming of environmental audits; in the use of special covenants for loans, whereby legal assurance is sought from the borrower that they are in compliance with all regulations; in the use of mandatory bonds to be posted by borrowers to cover potential future liability. Most banks have introduced complex, operational procedures to reduce potential risk exposure during loan-work outs.

UNEP has welcomed the integration of environmental awareness and environmental considerations in commercial banking operations. The more banks, capital markets and other segments of the financial services sector know about environmental issues, the better. Although there has been

progress in integrating environmental procedures in commercial credit, progress remains thwarted, for the simple reason that too much energy is spent to secure defensive positions against unfair and undue lender liability.



Clean-up costs for one gas station in New Jersey includes: \$600,000 for clean-up equipment. \$500,000 to run the equipment; and annual operating costs of \$50,000. In comparison to other sites, this is an example of a highly efficient, and relatively inexpensive, operation.



Once again, from an environmental perspective, if a small percentage of the time, resources, and talent that has gone into avoiding legal liability focused instead on finding new solutions to clean-up and environmental management issues, progress might be made in tackling a growing list of environmental issues. It is clear that new solutions are needed, especially in Eastern and Central Europe, as well as in rapidly industrializing economies. It is also clear that current regulatory uncertainty does not encourage the exploration of new solutions.

Restricting Credit: Lender liability has already restricted credit access to companies involved in waste management or other environmental management systems. An American Bankers' Association survey, conducted immediately after Fleet Factors (1990) found that 62.5 percent of community commercial banks rejected loan applications or potential borrowers based on the possibility of environmental liability. Another 45.8 percent had discontinued altogether the financing of some sectors, such as gasoline service stations or chemical businesses, because of liability.

One Gas Station Clean-Up: The ABA survey should not have come as a surprise, given that environmental clean-up costs, even for small operations like gas-stations, can be very expensive. To illustrate, an abandoned gas station in Lakehurst, New Jersey was found to have experienced several petroleum spills during the mid-1980s.

The State of New Jersey stepped in, as an emergency action. The storage tank was removed, soil excavation started, and a groundwater pump and treatment system installed. The groundwater pump is used to pump groundwater from the upper quifey and the system requires a dual air stripper to strip off volatile organics prior to the discharge to surface waters. In addition, twelve vapor extractors were used to vacuum out gases, which were then fed through a carbon unit prior to the release into the air.

The cost of installing the original equipment is in the vicinity of US\$600,000. Cost of operations and maintenance since the discovery of the site: \$500,000. Annual operating costs: \$50,000.

This is an example of an effective, and relatively inexpensive, contaminated site clean-up operation. For many remediation operations in the US, administrative costs alone can run in the vicinity of \$45,000 per year.

Site Estimates: In the United States, an estimated 5,000-7,000 hazardous waste sites have been identified as being in need of clean-up. Another 20,000 will likely need remedial action. In the former West Germany, as many as 35,000 abandoned industrial sites have been identified as being in need of clean-up. Average clean-up costs under a US Superfund sites are \$31 million. Some estimates have suggested that clean-up costs in the US could reach as high as \$500 billion. In the Netherlands, clean-up estimates are set at \$5.6 billion over the next 15-20 years.

OVERVIEW: RISKS TO LENDERS

As noted above, a key issue for lenders concerns the potential liability they face, as governments move to clean-up contaminated sites.

In addition to lender liability issues, however, there are numerous other financial risks which banks can face related to lender and other clean-up liabilities. Some risks include:

(1) that the collateral for real estate or property to be

acquired may be drastically reduced in value, after discovery of the existence of hazardous waste contamination;

(2) that the borrower cannot repay a loan if the borrower must face site clean-up costs for a contaminated property. Fines, penalties and clean-up costs can weaken the financial performance of a borrower, including undermining the capacity of the borrower to repay loans;

(3) that a mortgage may lose priority to legal requirements that the clean-up takes precedence over loan repayment. Some U.S. federal bankruptcy proceedings have indicated a superior lien for clean-up costs over loan repayment actions, to be paid out of claims against the bankrupt estate;

(4) that a lender might be liable to the extent of any credit extended to any debtor which has operated property containing hazardous wastes, which has generated such wastes, or which has transported wastes in an improper manner. Concern remains that potential risks may be extended to all creditors, and not just those creditors which hold as collateral property which contains hazardous wastes;

(5) that a creditor may become directly liable for clean-up costs if the creditor: forecloses on a contaminated property owner, becomes involved in the management of the company, or becomes involved in decisions related to the disposal of toxic or hazardous wastes;

(6) that a lender may not be able to pursue its foreclosure options on defaulted loans for fear of liability clean-up costs, thereby leaving little option but to “walk away” from its loan security;

(7) that a borrower does not maintain collateral or property with an environmental risk potential in an environmentally-sound manner, thereby facing direct liability for clean-up costs; and,

(8) that, aside from statutory liabilities that can be imposed on toxic waste contamination, there is potential liability for personal injuries or property damages, including civil damages.

Risks and Banks: Managing risk is the bread-and-butter of bankers. Yet, many banking associations have noted that lenders can find themselves in a difficult position regarding direct liability issues, because (a) the degree of risk is unknown: and (b) the management of risk is outside of the competence and jurisdiction of the creditor.

In a 1993 position paper of the *Australian and New Zealand Environment and Conservation Council*, entitled Financial Liability for Contaminated Site Remediation, the point is made that, prior to lending, banks seek to establish whether the potential business/borrower is:

- Able to meet its obligations to the bank;
- Conducting its business in a prudent and professional manner;
- Ensuring that the business has complied with all relevant laws, including obtaining all necessary environment approvals.

The *Council* argues that “the effectiveness of this process will largely depend on the accuracy of the information which the borrower has given to the bank. If a bank doubts that the borrower can conduct a successful and viable business, or that the business has complied with all necessary laws and has obtained the necessary approvals, the request for a loan will be probably be denied.”

However, the *Council* also argues that since banks are not in a position to monitor directly the day-to-day operations of the borrower, or to “police” the regulatory compliance of the borrower, they are left in a tenuous position of being potentially liable to pay for any residual liabilities connected with a borrower’s contaminated land.

The following section is intended to provide an overview of some current liability legislation, recent history of the issue, and selected positions of associations in attempting to clarify the liability issue.

EUROPEAN COMMUNITY

An important objective of the EC, under its Fifth Environmental Action Programme (1993-2000) is to establish an “integrated Community (Union) approach to environmental liability.”

The **EC Draft Directive on Civil Liability for Damage Caused by Waste**. The draft Directive proposes to establish rules for implementing the Polluter Pays Principle, which was accepted by EC member states in 1987, as well as under the OECD in 1972. Little progress has been made in this complex area, and until the Directive is passed, liability laws at the national level remain.

However, under the draft Directive, liability for environmental damage would be imposed regardless of fault. That is, liability would be strict, joint, and several. Liability could therefore be imposed on companies which generated the pollution or contamination, or on the persons in control of the waste when the incident causing the contamination occurred.

Liability for harm which could be imposed would include bodily injury, damage to property, and environmental damages. There are no limits to possible damages, except that the producer clean-up liability would be limited where costs substantially exceed benefits of full remediation (ie. a return to a pristine environment).

AVERAGE COST OF A SUPERFUND SITE IS \$31 MILLION

Under the draft Directive, it will be possible to launch a liability motion up to 30 years after the contamination occurred. However, a three year statute of limitation would be imposed, if the plaintiff was aware of, or should have been in a position to be aware of, damages when they occurred.

In 1993, the EC also issued a **Green Paper on Remedying Environmental Damage**. The Green Paper does not deal with fault-based liability, but rather adopts a strict joint and several liability approach. It proposes a special fund to clean up or to

restore damaged sites. The fund would be financed by those sectors most closely associated with environmental damages requiring remedial action. The approach would be an attempted enforcement of the Polluter Pays Principle, without over concern for past liability,

The proposed approach is that, while the individual company responsible for the damage cannot always be identified, the broader sector can, and should help bear the cost of clean-up.

The EC Green Paper notes that:

Lessons must be learned from national and international precedents in strict liability and the disadvantages and implications for the scope and structure of such a regime must be foreseen (how lenders and financial institutions will be affected, for example. A strict liability regime must only have the result intended, namely the restoration of environmental damage.

(4-1-2c)

The **Council of Europe’s Draft Convention on Civil Liability** establishes a system of strict liability related to environmentally-dangerous activities. These include the production, handling, storage, use, or discharge of dangerous substances, such as chemicals or toxic wastes. In addition, the draft Convention covers genetically modified organisms, which is of direct relevance to the biotechnology and pharmaceutical sectors.

The Convention also identifies operators of waste incineration, waste treatment, waste handling, waste recycling and waste disposal sites (landfills) as being open to systems of strict liability.

The draft Convention is of interest to bankers, in relation to the inclusion of exemptions to strict liability. Responsibility in the Convention is placed on the “operator” – defined as the person who exercises the control over the dangerous or environmentally-damaging activity. However, in discussing strict liability, the Convention notes:

An outside person who made possible or facilitated a dangerous activity, for example, by lending funds for

investment may not be considered to be the operator, unless he exercises effective control over the activity in question. Likewise, a creditor who exercises his rights in virtue of securities held on equipment for the dangerous activity is not, in principle, the operator within the meaning of the Convention.

Some have argued that, although going in the right direction, the Green Paper is flawed for several reasons:

(1) extending the scope of liability for environmental damages to cover environmental damages to common property is not the appropriate route. This should be handled through regulations, not through civil liability.

(2) the Convention would extend the application of strict liability for environmental damage, even though the definition of strict and fault-based liability provisions were, within the context of the Convention, unclear;

(3) the Convention would give too much power to non-governmental organizations by certifying special legal status with regards to civil action for environmental damages.

UNITED STATES

The centre of lender liability concerns is the United States. This is mainly in response to the manner in which liability issues were addressed in the late 1980s and 1990 in U.S. courts.

After a prolonged period of uncertainty, it appeared that clarification was forthcoming regarding lender exemptions, in the form of EPA Lender Rules, intended to clarify liability issues. However, a recent US Court of Appeals has ruled that the EPA can have no authority to issue rules on liability. A February 1994 submission by the American Bankers Association to the U.S. Subcommittee on Transportation and Hazardous Materials has starkly observed that this ruling “puts a cloud over all lending activity.”

The *Resource Conservation and Recovery Act*

(RCRA, 1976) was enacted to ensure the safe management of wastes from “cradle to grave” (generation to disposal) and to ensure the proper closure of hazardous waste facilities.

The Hazardous Waste and Solid Waste Amendments (1984), under section 3004 (a)(6), made RCRA requirements broader and stricter. They included procedures for labelling, transportation, disposal, notification, and others. RCRA was enacted essentially to prevent the contamination of sites by hazardous wastes, and it outlines requirements (including financial responsibility) to ensure hazardous waste operators can meet potential liability costs.

The *Comprehensive Environment Response, Compensation, and Liability Act* (CERCLA) is a remedial regulation to clean up existing contaminated sites. Under this Act, Superfund was created, with an original allocation of \$1.6 billion, increased in 1988 to \$8.5 billion. CERCLA allows the EPA to proceed with the clean-up of a hazardous waste site in one of two ways:

(1) EPA can initiate a clean-up and then sue the potentially responsible parties for reimbursements;

(2) EPA may request a court to issue a clean-up order against responsible parties, provided there is a public health threat. The responsible party can be held liable for all costs of removal and/or remedial action. In addition to costs incurred, responsible parties are liable up to \$50 million in damages to natural resources.

CERCLA provides for strict, joint, and several liability for the cost of removing and remedying a release or threatened release of hazardous substances and for harm to natural resources.

A party will be held liable when it is proven that: (1) a release or threatened release of a hazardous substance exists; (2) response costs were incurred; and (3) **the person** falls into one of four class of responsible parties which regardless of fault and/or intent, can be held liable for clean-up and damages caused by the release of hazardous wastes:

Scope of liability: Liability under Superfund identifies four types of persons liable:

- (1) The current owner and operator of a contaminated facility;
- (2) The owner or operator of the facility when the hazardous substances were disposed;
- (3) Any person who arranged for disposal of a hazardous substance at the contaminated facility;
- (4) Any person who accepts hazardous substances for transport to disposal or treatment from which there is a release.

Lenders face potential liability under Superfund mostly in relation to interpretation of the “current owner or operator” clause, or when the lender is involved in the management of the liable company.

Under U.S. corporate law, a surviving corporation is held liable for all the debts, contracts and torts (including environmental liability) of the predecessor corporation, regardless of when the merger took place. The scope may include shareholder liability for liability of parent corporations for the acts of a subsidiary company.

Case History: (1) In an early case, mortgages on two badly contaminated properties exceeded the properties’ value and the added cost of a state-mandated clean-up. The properties therefore burdened the bankrupt estate. The trustee sought to abandon the properties so that the title would revert to the debtor. The U.S. Supreme Court (1986) held that under the Bankruptcy Code, a trustee may not abandon property burdensome to the estate in contravention of state laws where the law is calculated to protect public health. The court required the trustee to use the estate’s assets to pay for the clean-up costs.

(ii) *United States vs. Whizco Inc.* (1985) The Sixth Circuit Court of Appeals held that a bankrupt company remains liable for clean-up or reclaiming an abandoned site despite bankruptcy discharge. The

liability is, however, limited to a non-pecuniary obligation to reclaim the site.

(iii) *Midland National Bank vs. New Jersey Department of Environmental Protection* (1986). The State Supreme Court refused to allow a bankruptcy trustee to abandon a hazardous waste site contaminated with PCBs. The Court held that where clean-up costs exceeded the value of the property, neither the debtor nor the appointed receiver “has a right to abandon property in contravention of state or local laws designed to protect public health and safety.”

(iv) *United States vs. Mirabile* The court held that a hazardous waste site owner’s secured creditor may be liable for response costs under CERCLA section 107 if the creditor exercised control over the daily operations of the borrower. The court, however, distinguished between the day-to-day operations and financial involvement.

Accordingly, the *Mirabile* court concluded that ABT, a creditor which merely foreclosed on the collateral property after all disposal operations had ceased and who took all prudent and ordinary steps to secure the property, would not be liable. The court also determined that SBA, the creditor which had authority to participate in the management of the company, but which did not exercise that option was not liable.

In contrast, Mellon Bank, the third *Mirabile* creditor, was held potentially liable. The court held that the nature of Mellon Bank’s involvement in the site included monitoring the cash collateral accounts, ensuring the receivables went to the proper account, and establishing a reporting system between the company and the bank.

(v) *United States v Maryland National Bank and Trust Co.* (1986) The court was asked to consider whether a foreclosing bank which owned the site actually “operated” the site within the meaning of subsection 107(a)(1) of CERCLA. The EPA alleged that the bank was a responsible party under section 107 by virtue of its foreclosure on the property which

housed the hazardous waste site, and, as such, should be held liable for the clean-up.

The Bank defended on the basis that it was not an owner or an operator. The court rejected the bank's position and held that "the exemption of subsection (20)(a), covers only those persons who, at the time of the clean-up, hold indicia of ownership to protect a then held security interest in the land." The court reasoned that the exclusion would not apply to former mortgagees, such as Maryland National Bank and Trust, which held title to the collateral after purchasing it at a foreclosure sale and holding title for nearly four years.

Activities exercised by the bank included assuming management of the debtor; obtaining the right to have a third party partly manage the affairs of the debtor; installing an agent to take over the management of the debtor's business; promising payment to other creditors on behalf of the debtor; and foreclosing on contaminated property that is held in security for a loan.

In the Maryland Bank case, actions aimed at protecting the lender's investment rather than at protecting its collateral brought the lender within the definition of "owner" or "operator" under CERCLA.

(vi) *United States vs. Fleet Factors Corp.* (1990). Seeking to impose liability for costs related to the removal of hazardous wastes and asbestos from a bankrupt cloth printing facility, the federal government filed a civil action under CERCLA against the sole shareholder and creditor, the Fleet Factors Corporation; who held security interest in the facility. The court reasoned that the construction of the secured creditor exemption is an issue of first impression in the federal appellate courts.

The government urged the court to adopt a narrow and strictly literal interpretation of the exemption that excludes from its protection any secured creditor that participates in any manner in the management of the facility.

The court declined the government's suggestion

because it would largely eviscerate the exemption Congress intended to afford to secured creditors. Fleet Factors Corporation argued that the court should adopt the distinction defined by some district courts between permissible participation in the day to day or operational management of the facility.

In *United States vs. Mirabile*, the first case to suggest this interpretation, the court granted summary judgment to the defendant creditors because their participation in the affairs of the facility was "limited to participation in financial decisions." (No. 84-2280, slip op. at 3). The court held that participation "which is critical is participation in operational production or waste disposal activities. Mere financial ability to control waste disposal practices... is not... sufficient for the imposition of liability."

After the financing agreement between Fleet Factors and the owner/operator, Swainsboro Print Works, ended in 1981, Fleet Factors never actually foreclosed on the real property. However, Fleet Factors did foreclose on some inventory and equipment after obtaining bankruptcy court approval. This inventory and equipment was auctioned through a liquidation company. Any equipment not sold or removed by purchasers were to be removed by another company, Nix Riggers, with whom Fleet had made an agreement.

Fleet had allegedly incurred CERCLA liability by participating in the management of the Swainsboro factory. The court decided to determine participation by dividing Fleet's actions into two groups: those before and those after foreclosure. The district court determined that Fleet's actions before foreclosure did not constitute participation. However, those actions after foreclosure, including the auction and removal of equipment, could constitute participation.

Since the government provided evidence that a genuine issue of material fact existed, the District Court denied the request for summary judgment and submitted the case to the Eleventh Circuit Court.

The Circuit Court argued that the statutory exemption

is too permissive towards secured creditors involved with toxic waste facilities. The court found that a secured creditor may incur section 9607(a)(2) liability without being an operator, by participating in the financial management of a facility to a degree indicating a “capacity to influence” the corporation’s treatment of hazardous wastes. In other words, the secured lender need not necessarily be involved in the everyday operations of a plant in order to be held liable. Furthermore, a secured creditor is liable if it makes managerial decisions for the debtor, but also if it has enough influence to affect hazardous waste disposal if it so chose.

The American Banker’s Association asked the U.S. Supreme Court to overturn the decision in *Fleet Factors*. The Court refused to hear the case, but the ABA did manage to draw attention to the fact that the lender exemption in Superfund needed to be clarified.

The interpretation of “security interest” exemption under CERCLA has created concern in lending communities following the *Fleet Factors* decision over whether certain actions normally undertaken by the holder of a security interest, such as monitoring facility operation, refinancing, and providing financial advice, should be interpreted as participating in the management of a facility, thereby prompting potential liability. The *Fleet Factors* decision has subsequently been regarded as a judicial anomaly arising from unclear legislative drafting.

U.S. Legislation: After *Fleet Factors*, Several Bills were introduced to the U.S. Congress in efforts to help clarify liability under Superfund Representative John LaFalce, Chairman of the House Small Business Committee, introduced a bill (H.R. 1450) in March 1991 with 123 co-sponsors aimed at protecting small firms that have been deprived of credit due to lender liability concerns. A similar bill was introduced in the Senate by Sen. Jake Garn.

The Garn bill (S.615) was intended to limit liability, from “under any federal law imposing strict liability for the release or threatened release of a hazardous substance” from certain properties, for an insured depository institution to the “actual benefit” received

by the institution for the clean-up undertaken by another party. However, none of the bills introduced ever made it through the entire law making process.

In 1993, several of these legislative initiatives were reintroduced into the Senate and Congress in slightly revised forms. The most important legislation to be passed, however, in the last two years is the Environmental Protection Agency’s (EPA) Lender Liability Rule.

EPA Rule on Lender Liability

The EPA Lender Liability Rule, which became final on April 29, 1992, is intended to provide an exemption permitting private and government lending entities to monitor and protect their security interests, to provide financial advice to distressed borrowers, and to foreclose on the interest, without incurring liability under CERCLA.

The proposed rule specified that as a risk management measure consistent with good commercial practice, an environmental inspection is considered to be probative evidence that the totality of a security holder’s actions is consistent with Section 101(20)(A) exemption.

In this rule, the EPA is interpreting the CERCLA Section 101(2)(A) “security interest exemption” to clarify the range of activities that may be undertaken by a private or government lending institution that holds a security interest in a facility in the course of protecting the security interest, without being considered to be participating in the facility’s management, and thereby voiding the exemption.

The “Specified Activities” rule provides that a security holder may require clean-up of a facility prior to or during the life of the loan; may require from the facility owner or operator assurances of compliance with applicable federal, state, and local environmental and other laws, rules, and regulations during the life of the loan; may periodically or regularly monitor or inspect both the facility (including regular inspections) and the facility owner or operator’s business or financial condition; may

provide periodic financial and other advice to a financially distressed debtor; or may take other actions that are necessary for the lender to manage the debt adequately.

The Rule also defines underdefined terms of exemption from CERCLA: “indicia of ownership,” “primarily to protect a security interest,” and “participation in management.” “Indicia of ownership” is defined by the Rule as evidence of an interest in real or personal property held as security for repayment of a loan or satisfaction of some other obligation. Such indicia would include mortgages, deeds of trust, and liens.

“Protection of security interest” has been clarified to mean the act of holding an interest in a property in order to protect a security interest.

This type of protection would not incur liability. However, holding a property for investment purposes would leave the lender open to liability questions. This consideration allows lenders to foreclose safely on property, without the fear that the act of foreclosing on a property itself might void the exemption. Specifically, foreclosing on a property would not incur CERCLA liability. However, the property would have to be put up for sale within 12 months.



The EPA Lender Liability Rule (1992) was intended to clarify liability exemptions.



The question of what constitutes “participation in management” of a company has caused the most difficulty in terms of defining the limits of the lender exemption in CERCLA, because “participation” was never clearly defined. The EPA Rule focuses on the role of the lender from the inception of the loan and during the loan.

The lender can be liable if it takes managerial responsibility in any form of waste management operations, (including setting policies and procedures), for the duration of the loan, or, in

managerial participation by overseeing disposal operations.

Although the rule does not consider liability due to participation after foreclosure on a security interest, it does not rule out liability under CERCLA on different grounds after foreclosure. Participation does not include review of borrower’s compliance with environmental laws or engagement in a loan work-out.

UNITED KINGDOM

Liability laws in the U.K. are not covered under one, comprehensive legislation related to the management of contaminated sites. Rather, there are several laws, each dealing with different waste management issues. For example, separate legislation exists for the transportation of wastes, disposal of wastes, importation of hazardous materials, management of industrial sites which generate wastes, as well as legislation related to the management of industrial and chemical accidents.



“Funds which could have gone to clean up damage or generate production have been dissipated in legal action.”

Former U.K. Secretary of State for the Environment.



In 1990, the U.K. Government introduced the *Environmental Protection Act*. Section 143 of the *Act* proposes the register of contaminative uses of land. The broad objectives of the section are to:

- (a) avoid unacceptable risks to human health and the environment;
- (b) wherever practicable, transform contaminated lands to beneficial uses;
- (c) avoid setting unaffordable clean-up objectives, which may drive away investment, lending, and

development from “brownfield” or dirty sites, and which place more pressure on “greenfield sites.”

Despite the absence of civil liability cases, lender liability remains a key concern of U.K. banks. The main fear is that the U.S. Superfund experience will be replicated either in the U.K. or under EC Directives. In 1993, the U.K. Secretary of State for the Environment indicated that the U.S. Superfund experience was filled with errors, which the U.K. did not wish to repeat. He noted that “several liability provisions have produced a system which is widely criticized as inefficient. Funds which could have gone to clean up damage or generate production have been dissipated in legal actions. I am determined to avoid that wastage of resources here.”

At the same time, the Minister noted that CERCLA had deterred further contamination.

The 1993 Advisory Committee on Business and Environment (ACBE) Finance Sector Working Group issued a Position Statement on lender liability. It warns at the outset that uncertainty in lender liability is deterring lenders and insurers from conducting business.

Where “contingent liabilities are deemed too great or are indeterminable or open-ended,” or where future liability is uncertain, the Statement warns that “lenders will not lend and this could seriously impede capital flows to certain sectors of industry.”

BBA Position: The BBA states that banks are not, and should not be, in a position to police the environmental performance of borrowers. The BBA argues that although environmental management is an important aspect in weighing a potential borrower's management quality, bankers are not environmental specialists. The Position Statement notes that, even if such actions were undertaken, the capacity of lenders to influence the operations of borrowers is often over-stated:

It is sometimes argued that lenders are in a unique position, or a better position than others, to influence a business's priorities and are therefore well placed

to drive forward the higher environmental standards which we all wish to see adopted. This represents a fundamental misunderstanding of the role of lenders and of the depth of involvement in the management of their borrowers' businesses.”

At the same time, the BBA recognizes that a borrower's environmental performance should be a key determinant in the success of a business. Banks will therefore look to environmental quality as one example of effective business management, and is one of the areas which banks will address in making a risk assessment of a potential borrower.

The Position Statement makes the following recommendation concerning liability:

(i) Passive Lender Situation – a lender should not be subject to environmental liability caused by a customer, if it has done nothing more than provide finance in the normal course of its business and has not taken an active role in the business that has directly led to the creation of environmental damage.

Therefore a lender's exposure should continue to be, as has traditionally been the case, limited to the amount of the loan granted and effectively be capped at that level.”

(ii) Legal Ownership – a lender should not incur liability merely because it holds a charge over, or is the “legal” owner, of goods or other property under the terms of a financing structure, for instance, chattel or property leasing.

(iii) Loan Procedures and Administration – for the purpose of environmental law, a lender should be able to conduct its normal lending practices without being regarded as being “concerned in the management” of the borrower's business.

In setting out what it believes is legitimate lender interests, the BBA argues that a lender should be able to do the following activities without running the risk of potential environmental lender liability:

- seek and supervise lending covenants, warranties, and events of default;

- stipulate and review environmental consultancy/audit reports covering land or processes;

- regularly obtain financing and other data from the borrower and provide ongoing financial advice;

- participate in “loan workout” activities, including: renegotiating or restructuring the terms of security, requiring payment of additional interest, exercising forbearance, providing specific or general financial advice or guidance, and exercising any right or remedy the lender is entitled to by law and under loan documentation.

However, in setting out legitimate loan-security related activities, the BBA also states that “a lender may fall within the ambit of environmental legislation, if a bank takes control of an enterprise and continues the business operations.” However, the BBA argues that taking possession of a property for purposes of security enforcement does not constitute grounds for liability.¹

In seeking clarity in legislation, the BBA endorses the broad concept that the polluter should pay for environmental damages and clean-up. However, the BBA notes possible uncertainty in such defining owner and operator, in determining who is the “polluter.”

With this latter goal in mind, and in recognition of the need to distinguish between past and future pollution, the ACBE concluded that:

(1) Retrospective liability should not be imposed for acts that were legal or met the established environmental standards of the day; and

(2) Liability for this (past pollution should be borne by the polluters providing legal culpability at the time of pollution. Where the polluter cannot or is not liable to pay, this should be treated as a social cost.

AUSTRALIA

Australian law related to liability is divided among jurisdictions at the Commonwealth, State and Local

government authority levels. Generally speaking, liability for contamination can include:

- * Criminal liability for the polluting activity causing contamination;

- * Criminal liability for failure to clean-up pollution as ordered by regulators;

- * Civil liability for the contamination of property;

- * Civil liability for the costs of remediation of contamination;

- * Civil liability for some other form of damage to someone arising from the contamination of the land (as a tort action).

Liability can cover (i) the polluting activity of a company which does not comply with environmental regulations; (ii) the directors of such a company; (iii) persons concerned with the management of the company; (iv) the owners of land, waste, vehicles, substances, ships and other assets; (v) the occupiers of the property; (vi) persons who cause, permit, aid or abet various non-compliance activities; and others.

Although there has not been a case in Australia comparable to activities under CERCLA, there is also broad concern about the uncertainty of Australian environmental law, as it concerns lender liability implications.

There is related concern that recent Australian law is adopting what can be characterized as a risk-based approach to environmental remediation costs, whereby clean-up costs are assigned to the current owner-operator, regardless of whether the current occupiers are responsible for the contamination.

Under *Rylands vs. Fletcher*, for example, liability is imposed on landowners for damage which results from the release of pollution and other substances from their land.²

The *State of Victoria Environment Protection Act* (1970) provides for the issue of a remediation notice to the polluter or occupier. The *New South Wales Environmentally Hazardous Chemicals Act* 1985 and *Clean Waters Act* 1970 allow the EPA to direct the occupier to clean up sites on their property: the EPA can direct the occupier or polluter to pay for the EPA or public authority's clean-up of the site, if they have been served a remediation order, but have failed to comply.

Under the *Clean Water Act*, if the polluter is not targeted first, the occupier – which can include the lender in possession – can be held liable for remediation of damages which occurred prior to taking possession of the security.

Australian banks can find themselves in a position of owner or occupier, faced with liability costs, when:

(i) the lender has obtained the legal title to land or goods for security reasons, as under a mortgage, but which otherwise does not have a connection with the land;

(ii) the lender has exercised a right to take possession of property for security purposes, or appointed a receiver or manager in bankruptcy, or any other agency to the mortgagee in possession.

A key concern of lenders, and the Australian Bankers' Association, stems from uncertainty connected with such terms as "owners," "occupier," and "being conducted in the management."

In September 1993, the Australian Bankers' Association prepared a report entitled Financial Liability for Contaminated Site Remediation. The basic position of the Statement is that legislation is required in order to establish appropriate exemptions from liability for financiers who have acted in the normal course of their lending business, and who have not contributed directly to the environmental damage of the company in breach of environmental regulations.

The ABA argues that when a commercial lender

reviews a loan application, it seeks to establish whether the potential borrowers (a) can meet its lending obligations, (b) conduct its business in a prudent manner, and (c) comply with laws and regulations. In Making this assessment, the lender has no choice but to rely, for the most part, on the information provided by the lender.

Since lenders have no role in the various approval processes – planning approvals, permits, works approvals, EPA licenses, trade waste agreements, etc. – associated with environmental projects, the ABA argues that it is unfair to hold them liable for clean-up costs lying outside their area of responsibility.

In a November 1992 Position Paper of the Australian Bankers' Association, the following recommendations were forwarded:

Passive Lender Situation: A lender should not be subject to environmental liability caused by a customer if the lender has done nothing more than provide finance in the normal course of its business and has taken no active role in the business that has directly led to the creation of environmental damage.

Legal Ownership: A lender should not incur liability merely because it is the "legal" owner of goods or other property under the terms of a financing structure (eg. chattel leasing).

Loan Procedures and Administration: A financier should be able to conduct its normal lending practices without being regarded as being "concerned" in the management of the borrowers business, for the purposes of environmental law. To cite a few examples, a lender should be able to seek and supervise lending covenants, regularly obtain financial and other data from the borrower and provide ongoing financial advice to the borrower, without risk of potential liability.

Enforcement of Security: Although it is understandable that a lender may fall within the ambit of environmental legislation if it takes control of an enterprise and continues the business operations, a lender who merely takes possession of

property for the purposes of security enforcement should not be subject to prospective liability.

The ABA has set out a “financial institution exemption” clause which it would like to incorporate into the state legislation. The clause states that a financial institution will not be liable under state environmental legislation “by reason only that:

(a) it makes a loan or otherwise provides or continues to provide financial accommodation to any party or parties in the ordinary course of its business;

(b) pursuant to financial arrangements with another party or parties, it holds indicia of title or is the nominal legal owner of any property;



WHO SHOULD PAY?

The Australian Bankers’ Association argues against the concept of “deep pockets,” whereby ability to pay for clean-up of a contaminated site obscures responsibility to pay. The ABA argues that (i) businesses involved in environmentally-sensitive activities must have the financial capacity at the outset to meet clean-up costs, and (ii) where responsibility for past contamination cannot be assigned, a “broad-based fund” should be established, paid for by all sectors of society without regard for assignment of liability.



(c) forecloses upon; appoints a receiver and manager, or agent for mortgagee into possession over; enters into possession of or otherwise deals with land or any other property for the purpose of protecting, enforcing, or realizing upon any security; or

(d) it provides financial advice to any person or persons or otherwise carries out any bona fide activities to monitor or manage a loan or other financial accommodation.”

The ABA has set out more detailed justification for liability exemptions. Suggested exemptions include:

- * “Innocent” Land Owners and Occupiers, including land contaminated by activities from an adjacent land;
- * Parties who become owners or occupiers of contaminated land by means other than purchase;
- * “Lawful” Polluters and Compliance Certificates;
- * Exemption of Liability extended to Third Parties, except when third parties participate in the management directly relating to the pollution;

CANADA

Clear legislative definitions of potential liability do not exist under Canadian federal or provincial laws. This is partially a reflection of the jurisdictional complexity of the Canadian system, as well as a potential lack of clarification of which actions constitute ownership, operator or other persons responsible and liable for clean-up.



The price of a smelter was \$2.2 million; clean-up costs: \$4.2 million.



No court decisions have been made, regarding direct lender liability issues. However, in a recent court case (Re: Northern Wood Preservers Inc.), a court suggested that environmental liability could be imposed on a party which takes possession of a polluting business.

Other examples of environmental liability include:

- * Lamford Forest Products Ltd., based in British Columbia, wanted to file for bankruptcy in September 1992, but failed to identify a bankruptcy trustee, which is required under Canadian law. Failure to identify a trustee was directly linked to the fact that no one would assume responsibility for the environmental hazards identified on the company’s site;

- * Environmental problems at Algoma Steel Corp. in northern Ontario were deemed so severe that the clean-up costs were estimated to be higher than the value of the assets. Environmental clean-up is one of the key reasons why the steel company had enormous difficulty in finding any buyers for the property.
- * Metals & Alloys Co. Ltd., a Toronto-based aluminum smelting company, had two plant sites listed for sale at a listed price of \$2.2 million. Estimated clean-up costs for both sites were almost double the selling price, at \$4.2 million;
- * In 1990, when Bayer AG of Germany agreed to acquire the synthetic rubber division of Nova Corp. of Calgary in a deal estimated at \$1.5 billion, a key and contentious aspect of the sale was the condition that Bayer assume liability for past environmental problems at the site;
- * After donating the site of a former oil refinery to the City of Calgary, Imperial Oil now faces a multi-million dollar clean-up cost, since – after donating the site – it was found to be contaminated.

Although most of these examples highlight environmental risk which indirectly affects borrowers, in the Algoma Steel case, one of the main creditors, Royal Bank of Canada, faced site remediation costs in excess of \$20 million.

Canadian approaches to contaminated site clean-ups have been fragmented. However, in 1989, the federal-provincial *National Contaminated Sites Remediation Programme* (NCSRP) was introduced, to address high-risk contaminated sites. The program has a modest five-year cost-sharing plan of \$250 million: \$200 million was proposed to be directed towards the remediation of orphaned sites; \$50 million is to be directed towards the development of remediation technologies.

The majority of environmental liability legislation associated with site remediation exists at the provincial level, except for lands under federal

jurisdiction. Under the *Ontario Environmental Protection Act*, for example, the scope of potential liability was recently expanded to include owners or operators of the source of environmental contamination, as well as previous owners of operators of the site. Concerns have been raised that past owners may be held partially liable for remediation, even if pollution occurred after the selling of the site to another owner.

A concern expressed by the Canadian Financial services sector is that they face two types of risk: direct lender liability, and broader, indirect risks. On the first issue, the Canadian Bankers' Association warns that liability runs counter to the goals of sustainable development;

Resource development and manufacturing operations in Canada have required, and will continue to require, considerable amounts of debt and equity financing. It is unrealistic for governments to assume that banks will continue to make loans to businesses in these conditions at current levels and on current terms and conditions, if financial institutions are not able to realize on real property and other forms of security that are given in return for the loan.

Nor will investors advance funds if the return on their investment is likely to be a liability claim rather than a dividend payment.

The CBA argues that environmental risk faced by borrowers also “impairs the creditworthiness of environmentally risky businesses”. Given the high reliance of the Canadian economy on natural resource extraction activities – such as forestry, mining, oil and gas, and metal processing – the CBA suggests that lenders face an indirect risk because “a large segment of the Canadian economy is subject to some form of environmental risk.”²³

In 1991, Canadian banks had \$2.1 billion in outstanding, non-mortgage loans in the oil and gas sector; \$775 million in outstanding loans to the mining sector; \$1 billion to the forestry sector, and extensive asset exposure in many other pollution-intensive sectors.

The CBA appears to make a case which lies outside mainstream approaches to lender risk in particular, and environmental management in general. That is, in light of the economic importance of pollution intensive sectors, the CBA seems to be indirectly suggesting that environmental risks to borrowers ought to be relaxed – presumably through a lowering of regulations – in order to reduce indirect risks to banks. This is not a tenable position from an environmental perspective, and it tends to miss the point that remedial action now is generally far less expensive than remedial action later.

With regards to direct liability, a lender will not usually incur liability by holding a security interest in real or personal property. However, it could incur direct liability by realizing on and taking possession of real property security. Furthermore, neither federal nor provincial legislation provides for a secured creditor exemption or an innocent land owner defence, such as in the United States.

In order to address direct liability issues, the CBA has issued Guidelines For Limited Environmental Risk, which outlines steps lenders should take in ensuring environmental due diligence. These steps include: (i) identifying potential environmental problems; (ii) evaluating legal and credit risks posed by environmental problems; (iii) structuring the terms of the loan, administration of the loan and; loan documentation to minimize risk of environmental liability.

CBA Due Diligence Guidelines:

General Risk Assessment: In reviewing the loan, the lead bank should make a general assessment of the level of environmental risk, based on a title search and knowledge about the borrower's business (ie. general sectoral knowledge of degree of pollution intensity, etc.) If questions are raised in the initial assessment, an environmental audit should be undertaken.

Environmental Terms in the Commitment Letter: Specific environmental terms should be included in the commitment letter, including as a prerequisite a satisfactory environmental audit.

Opinion of Legal Counsel: All matters related to environmental questions should be expressed by the borrower's legal counsel.

Phase One Audit: A checklist of a Phase One audit is provided. This includes site inspection as well as a review of records and documents related to the borrower's activities and site use.

Review of Phase One Audit: Information should be provided in the audit report, including results summary, opinion of property status, and recommendation about the necessity of a Phase Two audit.

Phase Two Audit: A list should be provided of soil, air, water, emissions, and other materials subject to laboratory testing.

Assessment and Impact of Audit Findings: The lender should review findings of the Phase Two audit to determine costs of environmental remediation; impact of clean-up costs on the pricing and terms of the loan, etc. Other banks, besides the lead bank, should have access to the Phase Two audit findings.

Third Party Indemnity: The lead bank should determine whether the borrower can provide an indemnity from a suitable third party to indemnify banks against liability.

Terms and Conditions of Loan Agreement: Terms should consider including the following:

- warranty that the property and its use is in compliance with all environmental laws; that all permits have been obtained; and that the borrower will continue regulatory compliance;
- warranty that the property is not causing or subject to environmental damage;
- warranty concerning current and future uses of the property;
- representation that past credit arrangements have not been altered because of environmental risk;

- covenant to take appropriate remedial measures in the event of environmental damages and to notify participating banks of such damages;
- covenant to permit participating banks to enter onto the property to conduct an environmental inspection(s) and to take such measures as necessary to remedy environmental damages;
- covenant to have periodic environmental audits;
- covenant to indemnify participating banks against environmental liability occasioned by borrower's activities or use of the property;
- covenant, as necessary, for environmental insurance.

THE NETHERLANDS

No specific legislation yet exists to address contaminated sites in the Netherlands, although the Second National Environment Plan advocates a more comprehensive approach to contaminated site management. The Netherlands contains thousands of waste sites that have been officially identified. Of those, approximately 1,600 are in need of environmental remediation,

This figure excludes active sites, in which industrial activity and waste problems continue (an estimated 93,000 additional sites).

In 1993, the Government began an ambitious plan to identify, list, and prioritize clean-up action for contaminated soils for all industrial sites. Estimated clean-up costs are in the vicinity of 50 billion Dutch Guilders. Although the first approach to projected clean-up will be enforcement of the Polluter Pays Principle, the Government is looking at other options for clean-up either under existing laws, or via new directives.

With regard to lender liability, draft legislation left open the door that mortgage holders could be held partially responsible for clean-up costs of contaminated companies which go bankrupt.

Proposed liability is, however, restricted to the profit margin because of increased property values resulting from the clean-up.

Site contamination laws are covered under several Dutch laws. The use and disposal of toxic substances is regulated through the *Substances Dangerous to the Environment Act* (1985). The law regulates all substances, produced for any reason, and covers all the stages of the substances' life-cycle, from when they are produced, to when they are finally disposed of.

The transport of dangerous substances is regulated under the *Dangerous Substances Act* (1963)⁵; controls on the dumping of toxic wastes are covered under the *Chemical Waste Materials Act* (1976)⁶. Other relevant legislation includes the *Nuisance Act* (1952), which covers risks of industrial accidents beyond the industrial site. Under the *Soil Protection Act*, provisions exist for strict liability, although the objective is primarily pollution prevention as opposed to the clean-up of old sites.

In addition to statutes in existing laws, the Minister of the Environment has the authority to pursue legal action for the clean-up of old dump sites. To date, approximately 100 claims have been launched in this way. Polluters are jointly and severally liable.

In one case, the government is attempting to bring a suit against Shell for site contamination which took place in the 1950s. For the most part, however, actions have focused on contamination which has occurred after 1975.

Legislation has also been introduced which will require companies to undertake soil investigation prior to transferring an industrial site to a new owner. If the site is found to be contaminated, either party must take responsibility for remediation. Concerns have been raised that this legislation will block the sale of contaminated lands, or that lenders in possession of the land during the transfer could be liable.

With regard to future liability, the Dutch system is

ahead of many others, insofar as polluters are increasingly under the umbrella of an environmental liability insurance scheme. The scheme, which does not operate for retrospective remediation claims, pools 48 insurers and six re-insurance companies from the Netherlands and abroad, with a gross premium income of DFI 2 million.

GERMANY

German legislation related to contaminated sites falls under several legislative regimes. The main laws dealing with contaminated sites are the *Chemical Substances Law* (1982); *Waste Disposal Act*; and *Act of the Prevention and Disposal of Waste*.

The worst environmental problems in Germany are related to soil and waste contamination, including orphaned industry sites, waste storage sites, and other sites in the former East Germany. The number of contaminated sites is estimated to exceed 50,000, of which many are in need of urgent clean-up action.

Under the *Act for the Prevention and Disposal of Waste*, primary liability falls on the generator and disposer of wastes. The *Act* only applies to hazardous waste sites which came into existence after 1972. Government jurisdiction includes the authority to order the operator of a site to take whatever steps are deemed necessary to protect the public or the environment. This includes the ordering of a clean-up.

German law also has the authority to issue abatement orders against, or require a clean-up from the current owners of a contaminated site, as well as the creators of the hazard, including the polluters. Such liability is strict liability – causation must be demonstrated, but not fault. Although several court cases have raised the question of the authority of regulators to order the clean-up of a site, thus far the status has not changed.

Under German tort law, provisions exist for strict liability related to contamination of water. The owner of a facility is liable if substances from the facility reach groundwaters. Owners can also be held liable for the cost of preventing ground-water pollution.

The German government has announced plans to extend strict liability for water contamination to soil and air pollution.

Transitional Economies

Countries with economies in transition provide an interesting situation for commercial lenders. These countries have a similar history of industrialization as OECD countries, but under a different regulatory regime. In Eastern and Central European countries, severe pollution, site contamination and resource degradation have led to chronic environmental and health problems. These countries now border on the verge of an ecological catastrophe.

One of the key challenges to regulators, in devising new systems, is to strike a balance whereby clean-up action moves ahead in such a way as not to restrict or hinder desperately needed outside finance.

In looking at liability issues for past contamination, functionally, the polluter in most transitional economies has been the government. Although government regulations in most Eastern and Central European economies were comparable to OECD regulations, few laws were realistically enforceable, and most were not enforced. Therefore, the former governments can be considered as responsible as owners and operators, and therefore, under the Polluter Pays Principle, liable parties. However, attempts to adopt liability approaches of OECD are obviously likely to prove counter-productive.

As for clean-up being financed through a social fund, taxation is already high enough that this is unlikely to occur. Therefore, new approaches, which might include specific exemptions to lenders for past contamination, the leveraging of public funds through bilateral and other funding sources, and commitment by private sector lenders to provide some additional finance in return for third party exemptions, will be increasingly explored by Eastern and Central European regulators.

1. The BBA argues that position of U.K. banks with regard to security enforcement is worse than

Continental banks. In the U.K., a lender enforces security by taking possession of a property, while in most Continental countries, banks never take possession, since the security is handled by courts.

2. The rule in *Rylands v. Fletcher* (1866) is seen by some as a potential clarification (ie. escape) from lender liability related to environmental damages. The rule is that *"the true rule of law is, that the person who for his own purposes brings into his lands and keeps there anything likely to do mischief if it escapes, must keep it in at his peril, and he does not, is prima facie answerable for all the damage which is the natural consequence of its escape."* It is viewed in both Australian and U.K. law as being a prime "toxic tort" case.

3. See Sustainable Capital: The Effect of Environmental Liability in Canada on Borrowers, Lenders and Investors, Canadian Bankers Association, 1991.

4. Wet Milieugevaarlijke Stoffen.

5. Wet Gevaarlijke Stoffen

5. Wet Chemische Afvalstoffen

**SECTION TWO:
REGULATORY ECONOMIC AND OTHER
APPROACHES TO ENVIRONMENTAL
MANAGEMENT**

INTRODUCTION

Environmental regulations are as diverse as ecosystems are complex. Standards include the control of air and water pollution; the management of toxic and hazardous chemicals; clean-up requirements for contaminated sites; land use regulations; standards for transport of wastes; environmental emergency requirements for industries; mandatory labelling, the protection of wildlife; the conservation of fragile ecosystems such as coral reefs and wetlands, etc.

Most industrialized countries introduced pollution abatement regulations in the early 1970s. In the last twenty years, approaches to environmental problems have become broader in scope, more stringent in allowable emissions, and more flexible.

Today, environmental responses encompass various policy options, including: command-and-control regulations such as "Best Available Technology" standards; the increased use of economic instruments such as pollution charges and rebate systems; and the development of comprehensive approaches to lay the foundations for sustainable development.

In addition to national approaches, increased emphasis continues on environmental management at the regional and international levels. A majority of the international efforts entail greater harmonization of approaches and consolidation of standards.

One example: in July 1994, the European Commission introduced a draft Directive, intended to harmonize all air quality monitoring and air quality standards for member countries. The Directive covers 14 air pollutants and proposes to establish maximum emission targets and timetables for polluters to meet targets.

A similar emphasis on regional environmental

management is reflected not only in other Directives under the EC, but in the implementation of the environmental provisions under in the North American Free Trade Agreement (NAFTA), including the establishment in 1994 of the North American Environment Commission.



A July 1994 draft EC Directive proposes to harmonize air pollution standards for member states.



At the international level, some 180 international environmental agreements have been negotiated and signed by governments. Issues covered range from air pollution emission targets and regional agreements to protect oceans and coastal areas, to the control of waste shipments and climate change.

In a manner similar to national approaches, international agreements continue to shift emphasis, from pollution remediation to the introduction of anticipatory and preventive measures. In addition, international approaches continue to move from general objectives to stricter standards: the March 1994 decision of the Basel Convention to ban immediately all international shipment of hazardous wastes from OECD to non-OECD countries is but one example.

Under the Basel Convention, work is also underway towards the development of an international Protocol on Liability and Compensation for hazardous wastes.

In light of the enormous quantity of work underway involving environmental regulations, lenders can neither be expected to keep track of all developments, nor to act as a sort of secondary regulator, ensuring that borrowers understand and comply with relevant regulations. That is the mandate of regulators and industry, not lenders.

As part of prudent management practices, however, the financial services sector is tracking with greater scrutiny general trends in environmental management, for two reasons. First, lenders have an

immediate interest – because of lender liability issues – in tracking regulations which may directly affect their operations. These include liability regulations related to hazardous waste; contaminated land-site rules; and other areas in which liability may be incurred.

Second, lenders are becoming more interested in understanding general regulatory trends which affect borrowers. In so doing, lenders are better positioned to weigh the extent to which a potential borrower is or can effectively and efficiently comply with regulations. Lenders are also better placed to weigh indirect risks of pollution-intensive sector, as well as to target high growth sectors by way of equity finance or convention lending.



Positive effects of higher standards can include gains in innovation, efficiency, front-runner effects and spin-offs.



The following is intended to provide lenders with an overview of some issues related to environmental standards and current issues.

STANDARDS AND COMPETITION

In the 1970s, environmental regulations concentrated on clean-up priorities: tackling a long list of pollution, waste management issues, site remediation, and other problems.

In the mid-1970s, at the peak of capital investment in end-of-pipe technologies in OECD countries, as much as 15 percent of capital and operating costs were directed towards pollution abatement in pollution-intensive sectors.

More recent estimates suggest that, for some pollution-intensive sectors like mining, forestry, chemicals and petro/agro-chemicals, oil refining, waste management, leather tanning, and other sectors, environmental compliance costs can remain in the vicinity of 15 percent of total costs. However,

on average, total environmental compliance costs in most OECD countries are in the range of 1.75 to 2 percent of GDP.

Jobs vs. Environment: Since environmental regulations were introduced, opponents of higher standards have focused on a limited set of issues. Some have used arguments, similar to those used in the current nicotine-addiction debate before the US Congress, that higher standards are not warranted because of insufficient or inconclusive scientific evidence.

Even if the science is strong, as in the case of the health and environmental effects of lead in gasoline, others have – since the early 1970s – argued that higher standards erode competitiveness. In the 1970s, the fight against higher standards was presented in a choice between “Jobs vs. the Environment.” Some argued that jobs would be lost if industries were compelled to divert fixed and operating costs to stricter regulations.

The argument continues, although it is increasingly shifting from the national to the international arena. The current trade-environment debate, for example, can be seen as a widening of the “Jobs vs Environment,” whereby fears are expressed that an upwards harmonization in environmental product and process standards will undermine comparative advantage and erode competitiveness.

During the NAFTA debate in 1993, for instance, detractors of the NAFTA-side accord on environmental standards argued that US-industries would migrate to Mexico because of lower regulatory enforcement.

Generalizations either way about the economic/competitiveness effects of higher environmental standards are notoriously unsound. It is clear that short-term costs of higher standards can be high. It is also clear that costs are in part a reflection of scale; smaller firms, especially in developing countries, may bear higher costs because of stricter standards. It is for this reason that a major focus of the Earth Summit, and of follow-up work, has been the twin issues of financial support and technology transfer for developing countries.

However, as Robert Repetto of the World Resources Institute argues, the competitiveness issue should also be seen in part as a “bluff” on the part of some industries which oppose change.

It should be stressed that this opposition to higher standards is increasingly becoming the exception rather than the rule. For example, the *Business Council for Sustainable Development* advocates higher environmental standards for industries – including industries in developing countries – because of the positive economic effects higher standards can bring. In the same vein, Repetto argues that higher standards are linked to stronger, not weaker economic performance:

Japan and Germany, two countries with strict environment standards, have never proven to be uncompetitive in international trade; India and the former Soviet Union, despite weak and ineffective environmental standards, have been strikingly uncompetitive in world markets. Obviously, other factors are determining the market outcomes. Although there are some reported cases seeking out overseas production locations with weak environmental standards, by far the greatest amount of direct foreign investment is in countries that have high environmental standards.¹

Generalizations about economic impacts of standards need also take account of two quantifiably difficult issues – scope of analysis and time. Concerning scope, competition issues should not be viewed in a sector-specific context. For example, if an industry has lower or non-existent pollution emission standards for toxic and hazardous wastes, the overall competition and other costs – in terms of contaminated water, increased health costs, etc. – will outweigh whatever marginal savings are incurred from lower standards.

The issue of scope is closely aligned to the question of time-horizons. One of the most important assumptions of sustainable development is time: current environmental management practices must be viewed in a time-horizon that includes both present and future generations.

POSITIVE EFFECTS

Although most assumptions focus on the negative effects of higher standards, in terms of sunk costs, more recent studies have pointed to positive economic/competition effects.

A 1993 study by Stephen Meyer of the Massachusetts Institute of Technology (MIT) showed, for example, a positive correlation between environmental investment and economic performance. The study, which assessed economic performance in U.S. states over a 20 year period, put forward the following conclusions:

(i) No negative effects could be detected between economic growth and prosperity and the level of environmental regulations. The report stated that “It simply was not true that states with stronger environmental standards fared less well than those with weaker environmental standards. While this was unexpected, it was not unbelievable.”

(ii) The discovery of a surprising, consistent, and systematic positive correlation between stronger state environmentalism and stronger economic performance.

Although drawing conclusions from selected reports is premature (since higher standards and performance are a function of a range of welfare choices), it is equally true that assuming that higher environmental regulations necessarily dampens competitiveness is often invalid.

According to a 1993 OECD workshop entitled *Environmental Policies and Industrial Competitiveness*, environmental regulations can have a positive impact on industrial competitiveness in several ways.

These include the yielding of:

- (i) innovation advantages;
- (ii) efficiency advantages;
- (iii) front-runner advantages; and
- (iv) spin-off activity advantages

As noted above, one of the most often-cited examples of a win-win scenario between economic and environmental benefits from stricter regulations is the much stricter air pollution regulations imposed by Japan in the early 1970s. These contributed to efficiency gains in industry, lower pollution, reduced energy and resources inputs, and a stronger competitive position of Japanese industry in the 1980s.

It is important to note that the OECD workshop also pointed to an important link between the capacity to benefit from higher environmental standards and scale: transnational corporations and larger companies are usually better equipped to adapt to higher standards.

Therefore, for smaller-scale companies, the cost of environmental compliance can be difficult. This has been a long-standing concern of lenders in dealing with various aspects of small-scale clients.

ENVIRONMENTAL PRINCIPLES

Before outlining some trends in regulations and management approaches, it is useful to highlight some key principles and concepts. They include:

The Polluter Pays Principle (PPP) is one of the key principles adopted by banks as a defence against lender liability. Adopted by OECD Ministers in 1972, it is intended to place responsibility for paying the cost of pollution on the enterprise which has caused, or is causing, the pollution.

The PPP assumes that environmental costs should be “internalized” by the polluter. After being largely ignored, the PPP has gained in profile in recent years, due to increased emphasis on the so-called internalization of ecological externalities.

In addition to the PPP, numerous other principles exist and are gaining acceptance within different legal regimes. (For an overview, see *Concepts and Principles in International Environmental Law*, UNEP Environment and Trade Series, Number Two, 1994.) Other principles of interest to lenders include:

Sustainable Development: the 1987 Bruntland Commission report “Our Common Future” defined sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

The 1992 Earth Summit focused on sorting out the operational consequences of the term “sustainable development.” This term is widely used in most industry codes of conduct, as well as in legal agreements as diverse as the Final Act of the GATT Uruguay Round and the Convention on Biological Diversity. Despite, or perhaps because of the unclarity of the term, it has gained enormous political and legal backing. The concept of sustainable development is also forming the basis of various “soft laws” in environmental management.

The Prevention or Precautionary Principle recognizes the existence of scientific uncertainty concerning environmental risk. It assumes that when potential risk is identified by science, but not confirmed because of an absence of data or empirical testing, the burden of proof should rest on avoiding the risk in order to prevent potentially catastrophic damages.

The Precautionary Principle is contained in the decisions of UNCED, as well as in a growing number of recent international environmental agreements. It is also contained in the 1992 *Statement by Banks on the Environment and Sustainable Development*.

The Efficiency/Effectiveness Principle: recognizes that cost-effectiveness must be an important part of environmental management.

This principle is reflected in the *Best Available Technology Not Entailing Excessive Cost (BATNEEC)* approach, whereby higher environmental standards are seen within a broader scope of capacity to pay. This Principle is particularly important to developing countries, which face the prospect of higher international environmental standards.

The Subsidiary Principle: aims to make the lowest level of government or relevant authority responsible for environmental decisions wherever possible, without leaving excessive residual externalities.

ENVIRONMENTAL RISK ASSESSMENT

The process by which environmental standards are established is complex. Standards are never static, but are continuously updated, in response to such factors as the discovery or clarification of new risks determined by scientific testing or in response to public pressure for higher standards because of known risks.

Given the complexity of standards development, it is useful for lenders and borrowers to have a broad understanding of how standards come about. (For a more details account of this process, please see Science, Risk Assessment and Environmental Policy, UNEP Series on Environment and Trade, Number 5, 1994).

A useful insight into the standards-setting process is found in the risk categories outlined in the European Commission's Directive 93/67/EEC, related to the toxicology of a single species. The Directive divides risk identification into the following categories:

Hazard Identification: the "identification of the adverse effects which a substance has an inherent capacity to cause."

Dose: Response Assessment: Although the categorization under this assessment is complex, the EC advocates two levels: for humans, the No Observed Adverse Effect Level (NOAEL); for the environment, No Observed Adverse Effect Concentration (NOAEC). If a clear assessment cannot be reached from effect levels or effect concentrations, then other benchmarks are recommended, including for example the LD50 (Lethal Dose) model.

Exposure Assessment, whereby the likely exposure of susceptible environmental or health components is assessed, using such information as the effects of an

accidental release of toxics, the conventional use of products such as solvents, pesticides or paints. This information is used to derive a Predicted Exposure Concentration.

Risk Characterization: This entails a conclusion or decision regarding the severity of the likely effects. There are various matrices involved, but both the EC and US Environmental Protection Agency (see Framework for Ecological Risk Assessment guidelines) suggest that, at the end of the day, judgements are required to weigh the evidence of known and likely risk.

RISK MANAGEMENT

This is the final, and from a regulatory approach, most important stage, whereby risks are ideally linked to regulatory responses. That is, the higher the risk, the more stringent the response.

Although this is often the case, particularly for health-related risks stemming from toxic or hazardous substances, variables are also often included in standards. These include non-scientific variables such as costs, public opposition to, or support of response options (such as local opposition to the siting of waste incineration treatment facilities, or public support for tougher industry regulations, etc.)

There are numerous ways in which risks are managed. These include:

Ambient Quality Standards: The most common approach to pollution abatement regulations is to establish a maximum threshold for pollution. Industries must perform below a maximum allowable pollution contamination level, sometimes established in parts per million or parts per billion. Under ambient quality approaches, regulators allow flexibility in the industry choice of technologies. In practice, however, standards may be so stringent that they require a specific technology application.

Technology-Based Standards: Require polluters to install specified abatement control technology, such

as catalytic converters for vehicles, or sulphur dioxide scrubbers for utility plants. Regulations do not specify technology-specific requirements, but factory-specific performance standards, which can usually be met through “best available technologies.”



The use of market-based instruments has doubled and almost tripled in many countries.



What can be characterized as the second generation of environmental standards and regulations began to emerge in the 1980s, to complement end-of-pipe regulations. Regulations shifted from clean-up, to pollution prevention.

Comprehensive Approaches: As environmental regulations become more complex, a number of countries and bodies have recognized the need to consolidate and to simplify regulations. One example is the July 1994 EC draft Directive intended to require common air quality monitoring standards and pollution limits for member states.

This Directive is part of an EC review process, intended to review and to simplify regulations for air and water quality. Under the draft Directive, up to 14 air pollutants would be covered, including sulphur dioxides, nitrogen, ground-level ozone, and carbon monoxide. The draft Directive consists of common reporting standards and setting of clear pollution-level limits, with a 10-15 year schedule for implementation.

The EC initiative is one example of growing efforts among regulators to simplify, avoid duplication, and build a broader, and more comprehensive approach to environmental regulations. Several countries have introduced comprehensive environmental management plans, eg. Canada’s Green Plan or the Second National Environmental Policy of the Netherlands, which take account of resource use, pollution generation, land-use, and other issues within a global context of sustainability. The Second Dutch National Plan contains clear recommendations for across-the-board pollution reduction targets.

An important part of comprehensive approaches is the shift from a near exclusive reliance on command-and-control regulations to increased use of economic instruments.

MARKET-BASED INSTRUMENTS

According to the OECD, use of economic instruments has doubled in the last five years in most industrialized countries.

The attraction of market-based instruments is considerable. While command-and-control regulations remain essential in controlling or banning severe environmental or health hazards (such as toxic or hazardous chemicals), there is broad consensus that regulations are not always the sole, or best, means of tackling environmental problems.

Regulations may, for example, be insensitive to installation and other abatement equipment costs. Technology standards, if too strict or narrow, may hinder industry innovation. More crucially, pollution-abatement technology approaches focus on cleaning-up pollution after it takes place, through end-of-pipe abatement technologies.

Potential Benefits: Although this focus has been successful in reducing several important air and water pollution emissions, end-of-pipe technologies may miss important “upstream” environmental objectives. These upstream objectives include reducing resource, energy and other per unit inputs. End-of-pipe regulations similarly may miss downstream opportunities, such as resource re-use and recycling.

By contrast, market-based instruments may help build assurance that individual polluters are able to reduce pollution to the point where the marginal costs of controls are equal to the costs of non-compliance (through such regulatory devices as fines, penalties, etc.).

Other potential benefits of market-based instruments: they offer relatively rapid pollution abatement, in a least or reduced-cost manner; they

promise to build systematic incentives to economic actors, whereby good environmental performance is rewarded with incentives, and bad environmental actors face higher pollution taxes or other penalties.

In this way, they are important in promoting behavioral changes towards more sustainable consumption.

From a government perspective, and to the suspicion of many in industry, market-based instruments also offer new revenue streams.

Possible Gaps: Although a great deal of attention has been placed on economic-instruments, many questions remain unanswered. The most important is the gap in empirical evidence about actual performance of instruments. Other questions include the appropriateness of introducing charges and taxes to inelastic or price insensitive prices; the effects of economic instruments on income distribution; public opposition to the introduction to any new taxes; and industry concerns about the competition effects of introducing new pollution taxes and other charges only at the national level.

This latter concern was, for example, one of the key factors in the dismantling of the original 1993 Clinton energy tax.

DEFINITIONS

Emission Charges: Tax or other charges on the discharge of pollutants in the air, water, or soil, as well as the generation of noise pollution. Charges are calculated according to the quantity, as well as the severity/toxicity of the pollutant;

Product Charges: Charges levied on products that are harmful to the environment, either during the production process, when the products are consumed or used, or when the product is disposed of;

Tax Differentiation: Positive or negative product charges, intended to encourage or discourage the consumption pattern of particular goods and services associated with environmental effects;

Marketable Permits: Environmental quotas, allowances, or ceilings on pollution levels that, once initially allocated by an appropriate authority, can be traded in the marketplace, by auction, direct sale, or other means;

Liability Insurance: Refers to the creation of a market in which the risks of bearing liability for uncertain environmental damages are transferred or partly covered by the insurance sector;

Deposit-Refund Systems: Perhaps the most common and oldest of market-based instruments. A deposit is paid by consumers on a potentially polluting product. When pollution is avoided because the product container is returned, the deposit is refunded, thereby creating an incentive for recycling or product container reuse.

Product Charges: One of the most common instruments in practice is charges on products which have environmental effects. Such charges cover such products as automobile tyres, batteries, lubricant oils, pesticides, feedstocks, plastic bags, non-returnable beverage containers, and others.

Product charges are most commonly used in the form of taxes on petroleum products. Tax rates vary depending on country and product; in most cases, charge rates have been set too low to have any decisive influence on consumer behaviour. Industrial users of heavy fuel oil products are subject to excise taxes in Australia, Austria, the Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland and the United Kingdom. Natural gas is subject to a resource tax in Australia.

In countries which have in place value-added tax systems (VAT), household consumption of light fuel oil and natural gas is often subject to charges. (The United Kingdom and Luxembourg are the only OECD countries which provide charge exemptions to both product categories.

An area of growing interest, and enormous longer-term economic implications, is consideration of charges to address carbon dioxide emissions. In

Norway, the Green Tax Commission – following an in-depth review of the design and performance of existing environmental taxes – recommended that the current taxes covering sulphur dioxide emissions continue, and that fuels such as coal and oil have differential tax rates, based on sulphur content.

Pollution Charges: Pollution charges are most widely-used for waste disposal. Denmark and Belgium levy charges on solid waste disposal. The rate of the Belgian tax is weighted according to the type of waste, toxicity, types of treatment available, and other factors.

In 1988, the Dutch government replaced individual charges levied on the storage, treatment, and disposal of some chemical wastes with a general product charge on all fuels. In 1992, Denmark increased its charge on solid waste from 40 to 130 DK per metric tonne.

Tradable Emissions: Tradable permits are of particular interest to governments weighing different options to address greenhouse gas emissions. As no end-of-pipe approaches exist to reduce carbon emissions, economic instruments represent the only viable option from a cost-effectiveness perspective.

Tradable emissions were introduced under the US *Clean Air Act* and remain an important tool in reducing sulphur dioxide air emissions. Under the 1992 amendments to the Act, a national ceiling of 8.95 million tonnes of allowable emissions is set, and a two-staged system is applied to utilities and other fixed emission sources. Under the scheme, permits are introduced nation-wide.

Once permits are allocated, if a plant reduces emissions below its prescribed allowance, it can “sell” excess permits to plants unable to meet targets. Accordingly, plants have an incentive to exceed minimum targets, while overall environmental quality is achieved in a more cost-effective and flexible way. Estimated savings from the tradable emissions scheme in the U.S. alone are \$1 billion per year.

In March, 1993, the Chicago Board of Trade began its first public auction of permits.

GREEN LABELS

The purpose of “eco-labelling” schemes is twofold: to guide consumers in their choice of environmentally less-damaging products; and to stimulate innovation and competition in the industrial sector in the development, design, and production of goods, by taking into account environmental considerations as a part of mainstream marketing considerations.

In the 1980s, a large number of labels were introduced at the company and industry levels. In response to confusion about product claims, and in an effort to introduce a new component in an overall environmental management system, approximately 25 governments have introduced, or are introducing, national voluntary eco-labelling schemes.

Although product categories, criteria selection, and other considerations in eco-labelling schemes differ widely, the general purpose is similar: to provide consumers with a government-endorsed product label, and to reward producers which follow environmentally-sound management/production practices. The label is intended to assure consumers that the product identified has undergone testing and certification by a government-endorsed agency, and that it is considered to be relatively more “environmentally friendly” than similar products in the same category.

Response to eco-labelling schemes remains varied and has for the most part fallen below expectations. In the case, for example, of paper products and detergents, the introduction of the Nordic Council’s White Swan scheme has clearly demonstrated strong public preference for labelled products. The largest fine paper trading company in Norway, for instance, increased its share of eco-labelled paper products sold in Norway from 5 to 50 percent in one year.

In the case of Singapore’s Green Label scheme, introduced in 1992, surveys of 18 companies that sell labelled products show a mixed consumer response: seven of the companies reported increased sales, nine companies reported no change in sales, and two reported decreased sales.

With regard to the selection of product categories, the goal of the label is to reduce environmental damages associated with a product category.² This implies that there are a number of similar products within a category, and that some of those products are relatively more environmentally benign than others.

However, when all products within a category may be considered to be harmful to the environment, such as certain household chemicals, then the entire product category may be excluded from a labelling scheme.

This difficulty with product category selection is reflected in the differences between national eco-labelling schemes: the German Blue Angel schemes (established 1977), for example, contains 75 product categories, while Canada's Environmental Choice Scheme (established 1988) contains 25 product categories.

Concerning the scope of the assessment criteria, the objective of the label is to assess the environmental impact of the product's entire life-cycle. Criteria requirements are over and above national requirements related to compliance with national quality, health, performance, safety, and other standards.

Some of the environmental considerations assessed in eco-labelling schemes include: the degree of air, freshwater, or other pollution associated with the manufacturing of the product; hazardous or toxic waste profiles; energy efficiency; noise pollution; product re-use; recyclability; and biodegradability to name but a few.



In March 1993, the Chicago Board of Trade began its first public trading of tradable emissions



There are two broad types of labels which reflect these considerations: The first type is a single criteria label, which provides information on one specific

aspect of the product, such as its biodegradability, or the absence of ozone-destroying CFCs.

The second type of label is, in theory, more comprehensive, and it is intended to be awarded to products which demonstrate a lower or relatively benign "cradle-to-grave" environmental impact. In practice, however, life-cycle analysis remains an extremely complex, costly, and uncertain analytic tool.

Although some inputs, such as energy, are relatively easy to quantify, others often prove very difficult. In the case of paper products, for example, questions remain about how timber resource inputs can quantify differences between sustainably managed virgin forest or recycled paper content.

Questions of life-cycle assessment become even more complex when different environmental values associated with local and global societal choices are included in the product label.

These issues of product categories and assessment criteria have raised a number of questions regarding the relationship between international trade and eco-labelling. Concerns have been raised that product category choices, and the processes by which different national eco-labels are mutually certified, are complex and unclear, and that they may constitute direct or indirect barriers to trade in goods.

In response, a number of international organizations have been addressing the trade aspects of eco-labelling schemes. Since 1991, for example, the GATT's working group on trade and environment has been looking at trade aspects of eco-labelling. The World Trade Organization (WTO) Committee on Trade and Environment will continue assessing eco-labels, particularly in relation to the Uruguay Round Final Agreement on Technical Barriers to Trade.

The **German "Blue Angel"** scheme, introduced in 1977, is among the oldest eco-labelling schemes. It is also one of the broadest in terms of product categories and products labelled. An estimated 4,000

products (1993) are covered in this programme, under 75 product categories.

Some 25 national eco-labelling schemes are in operation, and more are being developed.

The German label was introduced by the German Federal Minister and the Ministers for Environmental Protection of the Federal States. It is administered by the Federal Environment Agency, the Environmental Label Jury and the Institute for Quality Assurance and Labelling. Under the Blue Angel scheme, a product's life cycle undergoes examination, and one aspect of the product is emphasized depending on the product category. The programme is not a single criteria procedure since the product evaluation incorporates quality and safety standards in relation to the various effects on air, water, and soil quality, as well as the effects on energy and natural resource consumption.

Canada's **Environmental Choice** eco-label scheme was established in 1988 and is administered by Environment Canada. Nineteen guidelines have been established to cover 34 product categories (1993) on close to 700 product lines. Under this scheme, products are expected to fulfill the following broad criteria:

(a) Product categories must offer the potential for high, positive environmental impact. Specifically, a category must have the potential to minimize the release of harmful pollutants to the ecosystem, or to maximize waste reduction, energy conservation, renewable resource conservation, or non-renewable resource conservation.

(b) The entire life-cycle of the product should be considered when establishing criteria, even though the guidelines may only cover a few of the product category's environmental aspects.

(c) The product category should be marketable, and the drafting of the criteria should be a feasible process for that product category.

(d) Products have to comply with quality and safety standards.

(e) Product categories will not normally include those products which are covered in other regulations such as the Montreal Protocol, or which are covered by national legislation related to health and safety standards.

The **Nordic Council of Ministers** (Sweden, Finland, Iceland and Norway) introduced the White Swan label in 1989, which is administered by national agencies of the four Nordic country members. In April 1993, criteria were established for 14 product categories. Criteria are also being developed for six others. More than 200 products are currently covered under the White Swan scheme: the most common product group is "fine paper for printing, writing and copying."

The procedure for granting the White Swan label includes:

(a) National agencies receive suggestions concerning product categories. Only products that have an impact on the market and create considerable environmental problems are considered.

(b) Criteria proposed by an independent panel of experts are sent for review, and criteria are adopted by consensus by the four countries.

(c) National bodies issue licenses for the use of the label. Like some other national schemes, White Swan has an application fee of approximately US\$1,450, together with an on-going fee which corresponds to 0.4 percent of the product's turnover.

India's Ecomark scheme was introduced in 1991 and is administered by two committees: the Steering Committee, comprised of the Secretary to the Government and the Ministry of the Environment and Forests, as well as representatives of different sectors; and the Technical Committee, comprised of the Central Pollution Control Board, private sector organizations, experts, etc.

By 1993, 16 product categories had been developed, or were being developed. They include toilet soaps, detergents, plastic products, paper, architectural paints, lubricating oils, tea, coffee, edible oil, beverages, infant foods, and processed fruits.

The **Green Label scheme of Singapore** was introduced in 1992 and is administered by the Secretariat of the Waste Minimization Department, and an Advisory Committee. In 1993, five product groups were approved. They are: Office Automation Paper, Printing Paper; Hygiene paper; Stationery Paper; and Carbon-zinc batteries; compact fluorescent lamps; and alkaline batteries. In most cases, the Green Label relies on single-label criteria.

Other eco-labelling schemes include Ecomark of Japan (1989) the Environmental Choice of New Zealand (1992), and Eco-Logo of the Republic of Korea (1992). Several other schemes are in various stages of development: these include the EU Scheme, under the European Union; the Green Seal & Green Cross in the US; and the examination of national schemes by the governments of Thailand, Brazil, Colombia, Malaysia and the ASEAN countries.

SELECTED NATIONAL STRATEGIES

Japanese pollution-control laws provide an example of the potential economic value of command-and-control regulations. They are often cited by economists (eg. Michael Porter at Harvard) as an example of how stringent home-based standards not only do not inhibit growth, but actually promote it.

The basic law for *Environmental Pollution Control* in Japan was enacted in 1967. It defines environmental pollution in terms of damages to health or the living environment caused by pollution of the air, water, or soil as a result of industrial or other activities. This law has subsequently been updated on a number of occasions: in 1969, under the *Law for Pollution-Related Health Relief*; in 1972 under the *Law for Pollution-Related No-Fault Liability*, seen as an early attempt to implement the Polluter Pays Principle; and in 1973 in the *Pollution-Related Health Damage Compensation Law*.

These laws establish a strict legal framework for ambient and technology standards. Regulatory emphasis has been on “best attainable technology as opposed to best available technology. This is seen as a precursor to current BATNEEC initiatives.

Costs of adopting this approach seem to have contributed to economic growth: environmental costs, in the words of one Japanese commentator, seem to have “worked to expand the economy in the form of effective demand creation and had an income effect, not a price effect in terms of an increase in wholesale prices.” During the 1970s, 5.2 trillion yen were spent on anti-pollution facilities. During that same period, economic growth was in the vicinity of 4 percent per annum. The shift away from pollutant-intensive industries – especially in the automobile, oil-based energy sector, and in the petrochemicals industry – had a number of positive advantages including:

- increased exports of new cleaner technologies to other industrialized countries.
- increased sales of cleaner automobiles and other transport systems.
- a strongly innovative domestic market, forced to rapidly introduce cleaner and more efficient technologies.

Australia: Environmental jurisdiction rests mainly with the States. The federal government has jurisdiction in a number of areas, including: Environmental Impact Assessments; regulations governing hazardous wastes; dumping into coastal waters; and oil spillage into the marine environment.

Certain Acts also fall under federal jurisdiction. These include the *Ozone Protection Act*, the *Industrial Chemicals Act*, *Resources Assessment Commission Act*, and the *Agricultural and Veterinary Chemicals Act*.

Australia has taken a leading stand on atmospheric change by drawing up a national strategy for ozone layer protection and a plan to reduce greenhouse

emissions by 20%. These initiatives, and others in forest management, wilderness designation, the conservation of biodiversity, land and water rehabilitation, the regulation of hazardous wastes and chemicals, and energy and mining policies are to be brought together under a comprehensive strategy for sustainable development.

United Kingdom: UK regulations connected with industrial impacts on the environment date to the *Public Health Act* of 1848. Common law has followed this general approach of public nuisance, as reflected in *Rylands vs. Fletcher*. U.K. legislation on pollution has seen two major amendments:

(i) The *Control of Pollution Act* (1974) introduced a variety of new controls over the collection and disposal of waste. It is still in force.

(ii) The *Environmental Protection Act* (1990 EPA) covers a broad spectrum of environmental concerns. It brought into force a system of “integrated pollution control” (IPC), designed to apply to all processes in England and Wales prescribed by the Secretary of State. The subsequent *Prescribed Processes and Substances* legislation, which appeared in 1991, (amended also in 1992) lists processes to which the earlier act applies. Additional legislation affecting water resources was also added under the *Water Resources Act* 1991.

Germany: Since 1983, Germany has developed one of the world’s most stringent air pollution regulations. In addition to this, and despite difficulties with implementation, it leads the way in packaging and recycling requirements and in many process standards. It also exceeds EU standards for vehicle emissions.

Regulatory responsibility lies mainly with the separate States, although the central government has passed one of the most comprehensive pollution industry retrofit programmes, in which an estimated 21 billion DM was forecast to be spent on power plant regulation over the last ten years. Best available technology (BAT) is mandatory in many cases, but time lagging prevents excessive expenditure where it

would otherwise occur. Strict liability laws for pollution from stationary sources are already in place in Germany.

In terms of percentage of GNP, Germany continues to be among the leaders in spending on environmental protection: 1.74 percent in 1991. In the chemicals sectors, estimates suggest spending in the vicinity of 2.5 percent; in the energy sector, 2.3 percent. In terms of German exports which require high environmental protection, exports are higher in absolute value than those of any other country, forming some 12 percent of world market share.

In end-of-pipe abatement technologies, between 1985 and 1988, more than 30 percent of all patents applied for in more than one country originated in Germany.

Canada: The most comprehensive legislation at the federal level is the *Green Plan*. Key regulations within this document include the 1991 *Health and Environment Action Plan*, which includes a *Drinking Water Safety Act*, a programme to investigate air pollution effects, including climate change and acid rain, and a waste management study to assess health requirements.

During the course of the decade, the Canadian government plans to introduce regulations for all toxic substances, including commercial chemicals and effluent, wastes, and emissions from major industrial sectors. Regulations for smelters, petroleum refineries, chemical production facilities, power generation stations, metal finishing, textiles, mines, and steel plants were expected to be in place by 1994.

Comprehensive plans are underway to more broadly consider market-based instruments. Recently, the Canadian Deputy Prime Minister reiterated Canada’s commitment to a 20 percent reduction in carbon dioxide emissions.

The Canadian environmental sector is valued at \$US 8-10 billion, with growth of about 7 percent per year. In some sectors, growth forecasts are

approximately 20 percent. The Canadian pollution control equipment market (excluding services) is estimated to total \$US 1.4 billion, an increase of 43 percent since 1986.

Growth in Canadian environmental activity is expected to come primarily from municipal expenditures on water, wastewater, and solid waste control, and private industrial expenditures (pulp and paper, petroleum, and metals) intended to meet new environmental regulations.

The Netherlands: The Dutch National Environmental Action Plan (NEAP) is probably the most comprehensive environmental legislation currently active in the OECD. The NEAP not only provides for waste management, recycling content, emissions standards, and health regulations, it also encourages business to invest in cleaner production.

The Dutch experience underlines the benefits of institutionalizing dialogue between industry and regulators. This was achieved via the creation of a special programme – the PRISMA programme – which is backed up by specific targets. Most industrialists quickly realize that it is better to agree than to watch tougher legislation put in motion. As a result, the combined effects of the NEAP have contributed to a 60-70 percent reduction of Dutch pollution.

The volume of municipal waste in Holland has, for example, declined in 1992 for the first time since 1945. The follow-up NEAP II has recently been completed, and it sets out more stringent pollution and natural resource-use reduction targets.

United States

The US domestic environmental sector is extremely large, and it is expected to increase in size significantly in specific markets. Projections estimate that 43 percent of all disposable plastics will be made from recycled plastics by the year 2002. The use of landfill sites for disposal is expected to decrease from 96 percent today to 36 percent by 2002. Waste-to-energy markets are forecast to undergo extensive growth.

The U.S. solid waste market is estimated at \$20 billion per year and is forecast to double by the year 2000. Municipal wastewater capital expenditures are projected to reach \$2.8 billion in 1995. The EPA estimates that cleaning the nation's surface waters by 2000 might cost upwards of \$110 billion, with tertiary water treatment systems markets rising by 7 percent per annum. In 1992, demand for U.S. air pollution control technologies was estimated to be (in US\$ millions);

mechanical collectors	\$25m
solvent recovery	\$35m
wet scrubbers	\$40m
flue-gas desulfurization	\$160m
electrostatic precipitators	\$100m
oxidization systems	\$135m
fabric filters	\$195m

In February 1994, although discretionary spending at the federal level was reduced by \$7.7 billion, the estimated increase in environmental expenditures was 5 percent, according to the Wilderness Society. Budget allocation for watershed restoration increased by 20 percent.

The EPA will also provide states with \$1.6 billion for water pollution control improvements and \$1 billion for energy efficiency and renewable energy research.

Ghana: During the 1980's, industries in Ghana underwent an almost two-fold growth. The number of factories doubled, with the preponderance (67%) operating in the vicinity of the capital, Accra.

Concomitantly, pollution levels also began to rise. In two of the worst sites for example, arsenic began to appear in food items and in hair samples, and to be implicated in "black spot disease", a form of skin cancer. Scrap metals began to accumulate and by the late 1980's over 300,000 tonnes of aluminum dross, scraps, slag, potlinings, and offcuts were already identified. As plastics manufacturing took off, open burnings increased, and groundwater wastes associated with a wide variety of agricultural, chemical, textile, paper, and petrochemical industries assumed alarming proportions.

The Government of Ghana set up a national Think Tank on Environmental Issues in March 1988 to draw up a working programme of action on the environment. This was to be embodied in its second structural adjustment programme, and tied in closely with the National Environmental Action Plan drawn up in conjunction with the World Bank.

This action plan deals with issues such as:

- Land management
- Forestry and Wildlife
- Water management
- Marine and coastal ecosystems
- Mining, industry and Hazardous Chemicals

Egypt: Recently, the Government endorsed the *Environmental Protection Law No. 4/1994*, which provides, for the first time in Egypt, legal protection for environmental resources such as air, water, soils and seas, as well as natural reserves.

The law also provides for the prosecution and punishment of transgressors. Relevant enforcement legislation is expected in six months time. The possibility of an Environmental Police Force has not been ruled out. Pollution caps as well as rules for EA's and for the impact of new private and public projects are also being drawn up.

Bolivia: Industrialists recently had to bow to environmental pressure when the lower house of parliament passed the controversial Forestry Law on February 8, 1994. The 100 article text calls for sustainable forestry, in specified zones, with land being leased out on a 40 year basis.

The law also establishes usage rights payments between 1.1 and 2.6 dollars per hectare, depending on zones which are classed as critical, limited, normal, and higher potential. Such legislation provides a model which other countries in the region and across the South can study.

Vietnam: On December 29, 1993 Vietnam passed its first environmental law. The focus of the legislation is on preventing further degradation of the Vietnamese environment, which has been seriously

degraded by years of conflict. Deforestation and soil degradation, two current pressing issues, are addressed.

Hazardous Wastes Regulations in Non-OECD countries: the number of regulations concerning hazardous wastes has increased in developing and transitional economy countries. In Poland, for example, legislation was recently enacted to protect against trade in hazardous and toxic wastes. In August 1993, the Polish Ministry of Environmental Protection, Natural Resources and Forestry issued a list of 106 hazardous wastes forbidden for import and export, of which 10 categories of hazardous products such as withdrawn pesticides, are included.

In Estonia and the Philippines, legislation has been enacted since 1990. Concerns centre on waste definition, import and export of wastes, the transit of wastes through national territory, the duty to re-import rejected waste shipments, and the illegal traffic of hazardous wastes.

In the Philippines, the Philippine Republic Act 6969, of 23rd July 1990, is an Act to control toxic substances and hazardous and nuclear wastes. It stipulates penalties for violations of the Act, and for other purposes. In Estonia, the Decree of the Government of the Republic of Estonia, 34, about the order of import, export and other kinds of transportation of hazardous wastes, amended with the Governmental Decree No. 365, 30 December, 1992, details measures on all mentioned topics. It also provides a loose definition for wastes.

Since the 1990's, similar legislation related to the definition, use, and handling of wastes has been passed in Argentina, Cameroun, Djibouti, Gambia, India, Nicaragua, and Nigeria.

1. See Robert Repetto, *Trade and Sustainable Development*, UNEP Environment and Trade Series, Number One, 1994.

2. For more information on product category, criteria selection and international trade implications, see Veena Jha, René Vossenaar and Simonetta Zarrilli, *Ecolabelling and International Trade*, UNCTAD Discussion Papers, October 1993.

SECTION THREE INTERNATIONAL STANDARDS AND AGREEMENTS

INTERNATIONAL ENVIRONMENTAL STANDARDS:

Like health, worker safety, and other standards, most environmental standards are established at the national level. However, in recent years, increased emphasis has been placed on developing international responses to a growing list of problems at the transboundary, regional and global levels.



Most large companies have developed internal environmental policies. In addition, some 35 industry green codes of conduct now exist.



International standards generally can be divided thus: (i) voluntary guidelines, codes of conduct and standards; and (ii) international environmental agreements.

A 1992 UN survey of transnational corporations showed that the majority – over 80 percent – had adopted a company statement and internal guidelines for environmental management. In addition, more than 35 voluntary industry codes of conduct and guidelines now exist. Guidelines range from sector-specific codes of conduct, covering the chemicals or agro-chemicals or transportation sectors, to more general, industry-wide commitments.

An example of the former is the *Responsible Care* programme of the chemicals industry. An example of the latter: the *ICC's Business Charter for Sustainable Development*.

Although not legally-binding, codes provide lenders with a good overview of best environmental management practices in different sectors. In turn, such information can be useful in helping lenders clarify necessary due diligence procedures for different sectors. And finally, such codes help lenders identify companies which pursue environmental responsibility as part of an overall corporate commitment.

The following is intended to provide examples of voluntary codes, as well as updates of issues related to international standards and international environmental law.

Voluntary Codes:

(1) *Code of Ethics on International Trade in Chemicals: The London Guidelines:*

In April 1994, international agreement was reached to adopt a *Code of Ethics* for international trade in chemicals. Although non-binding, the Code is addressed to industry and covers the production and management of chemicals in international trade, taking into account their life-cycle (or cradle-to-grave characteristics).

The *Code* includes provisions on the minimization of health and environmental risks from chemicals, including chemicals packaging and labelling, testing, risk assessment, and quality assurance. Work on strengthening this code continues through the international negotiation of a legal agreement on the management of chemicals. Already, the Danish Government has proposed a ban of all dangerous chemical shipments from OECD to non-OECD countries.

An international agreement on chemicals will be of considerable importance to the chemicals and related sectors.

(2) *The Ceres Principles*

In February 1994, General Motors signed the *Ceres Principles*, because, according to GM CEO John F. Smith, the company “wanted to show that economic growth, technology, and environmental quality can be compatible”.

Given that GM has often been seen in the frontlines of industry hesitation regarding higher environmental regulations, the endorsement by GM underlines that fact that many of the objectives in the CERES Principles coincide with mainstream business goals. To date, approximately 70 companies

internationally have endorsed the Statement which follows:

(i) Protection of the Biosphere: We will minimize and strive to eliminate the release of any pollutant that may cause environmental damage to the air, water, or earth or its inhabitants. We will safeguard habitats in rivers, lakes, wetlands, coastal zones and oceans and will minimize contributing to the greenhouse effect, depletion of the ozone layer, acid rain, or smog.

(ii) Sustainable Use of Natural Resources: We will make sustainable use of renewable natural resources, such as water, soils and forests. We will conserve non-renewable natural resources through efficient use and careful planning. We will protect wildlife habitat, open spaces and wilderness, while preserving biodiversity.

(iii) Reduction and Disposal of Waste: We will minimize the creation of waste, especially hazardous waste, and wherever possible recycle materials. We will dispose of all wastes through safe and responsible methods.

(iv) Wise Use of Energy: We will make every effort to use environmentally safe and sustainable energy sources to meet our needs. We will invest in improved energy efficiency and conservation in our operations. We will maximize the energy efficiency of products we produce and sell.

(v) Risk Reduction: We will minimize the environmental, health and safety risks to our employees and the communities in which we operate by employing safe technologies and operating procedures and by being constantly prepared for emergencies.

(vi) Marketing of Safe Products and Services: We will sell products or services that minimize adverse environmental impacts and that are safe as consumers commonly use them. We will inform consumers of the environmental impacts of our products and services.

(vii) Damage Compensation: We will take

responsibility for any harm we cause to the environment by making every effort to fully restore the environment and to compensate those persons who are adversely affected.

(viii) Disclosure: We will disclose our employees and to the public incidents relating to our operations that cause environmental harm or pose health or safety hazards. We will disclose potential environmental, health or safety hazards posed by our operations, and we will not take any action against employees who report any condition that creates a danger to the environment or poses health and safety hazards.

(ix) Environmental Directors and Managers: We will commit management resources to implement the Principles, to monitor and report upon our implementation efforts, and to sustain a process to ensure that the Board of Directors and Chief Executive Officer are kept informed of and are fully responsible for all environmental affairs. At least one member of the Board of Directors will be a person qualified to represent environmental interests to come before the company.

(x) Assessment and Annual Audit: We will conduct and make public an annual self-evaluation of our progress in implementing these Principles and in complying with applicable laws and regulations throughout our worldwide operations. We will work toward the timely creation of independent environmental audit procedures which we will complete annually and make available to the public.

(3) Green Packaging Recommendations:

The World Packaging Organization (WPO) proposes the establishment of a global project, designated the International Packaging Programme, to be implemented within the framework of the United Nations system.

The ultimate development aim of the project is to promote better understanding and use of packaging in developing countries. Food loss is one major area of concern, since it is estimated to be in the region of

50 percent in some least developed countries, and 30 percent in most other developing countries.

However, the WP initiative will have several other important impacts, particularly vis a vis international trade and environmental protection. Some of the objectives include:

(i) provision of impartial information to developing countries about environmental issues related to packaging including an “early warning” system for packaging producers users in those countries.

(ii) provision of information on packaging and labelling regulations, setting up a developing country network provision.

INTERNATIONAL STANDARDS ORGANIZATION

An extremely important development in international environmental issues involves work by the International Standards Organization (ISO) to develop new systems of environmental management at the global level. Such systems – which will include environmental auditing standards – are of direct importance to lenders, particularly in determining due diligence procedures for offshore lending.



In 1993, the ISO established a Technical Committee on the Environment.



In 1991, in response to the worldwide importance of environmental management systems, the International Standards Organization (ISO) and the International Electrotechnical Committee established the Strategic Advisory Group for the Environment (SAGE). The mandate of SAGE included:

- assess future international standardization, with the aim of applying the concept of sustainable industrial development. Work will include consumer information and eco-labelling; transport of resources, in particular raw materials and energy; and environmental effects during production, distribution, use of products, disposal, and recycling;

Working groups established under SAGE were formed to begin developing international standards for: Environmental Management Systems; Environmental Auditing; Environmental Labelling; Standards for environmental performance evaluation; Industry Mobilization Plans; Life-cycle Analysis; and Environmental Aspects in product standards.

Quality Management: One approach to environmental management, which has originated from industry, is to link environmental performance to mainstream Quality Management standards. The underlying assumption of Quality Management Systems is that by putting in place management systems like purchasing control systems, product identification and traceability standards, and process controls, exporters can improve their competitive stance.

In 1987, the *ISO 9000 Quality Management Systems* was issued as a voluntary guideline for enterprises. It outlines different stages of quality management. These range from product design to internal audits. This guideline has proved one of the most successful standards for management systems ever produced and thousands of companies in 70 countries have now been accredited under the ISO 9000 series.

There is considerable interest among industries – particularly large corporations – to link environmental performance to “total quality” management. That is, companies that pursue total quality management should, by definition, experience overall improvements in environmental management. Although this is an obvious generalization, it has sparked continued work by the SAGE group to link international standardization of environmental practices to the development of important new environmental management standards.

ISO Technical Committee 207: In 1993, the ISO established Technical Committee 207. In the next three to four years, the ISO is charged with developing international environmental management standards, under the ISO 14000 Series. Standards are expected to be developed in four areas:

- (1) Environmental Management
- (2) Environmental Auditing
- (3) Environmental Labelling
- (4) Environmental Performance Evaluation.

Such “standards” are likely to be different from technical standards, adopted under the ISO, for telecommunications, transport, electronics or other areas. These standards are likely to comprise management performance targets.

Nonetheless, the mandate of the ISO TC 207 will be of particular importance to lenders as they move to develop internationally-accepted due diligence procedures.

Standardization in such areas as environmental management, environmental auditing, and performance evaluation will be extremely useful, both in internal environmental evaluations, as well as in assessing the potential risk of a borrower.

World Health Organization (WHO) Environmental Health Guidelines and Criteria:

The WHO has issued non-binding guidelines for drinking water and air quality. These guidelines, which are based on scientific data, are intended to serve as a benchline for the development of national air and water quality standards.

(i) *Drinking Water Guidelines:* In 1993, the WHO issued guidelines for drinking water quality. Developed over several years, they contain recommended maximum concentrations of microbial and chemical contaminants.

(ii) *Air Quality Guidelines:* WHO first published global air quality criteria and guidelines for urban pollutants in 1973. These guidelines cover the major conventional (non-toxic) pollutants: sulphur oxides, particulates, carbon monoxide, photochemical oxidants, and nitrogen dioxide.

Since 1976, WHO has also supported (with UNEP and the ILO) the Environmental Health Criteria Programme, intended to provide national authorities with information concerning chemicals hazards.

INTERNATIONAL ENVIRONMENTAL AGREEMENTS

International environmental agreements (IEAs) have existed for over a century. The first ones were drafted to conserve endangered wildlife and to protect the world’s marine environment. The depletion of whale, fish and other stocks were early concerns.



Some 180 international environmental agreements now exist.



Today, an estimated 180 IEAs exist. These cover a broad range of issues such as pollution reduction, control of chemical dumping in international waters, control of sulphur dioxide emissions, etc. The most recently adopted agreement is the June 1994 *Convention on Desertification*, which comprises strategies to address land degradation and desertification. Below is a summary of some key international agreements which are of interest to lenders.

BASEL CONVENTION (*Hazardous Wastes*)

Each year, roughly 340 million tonnes of hazardous wastes are generated. Precise estimates of total amounts are difficult to obtain because of differences in technical categorization, monitoring, etc.

The following classification by recent U.K. Government guidelines outlining potential contamination of land from different activities, is a useful summary of the most common sources of hazardous wastes:

- * Agriculture: deceased livestock, fungicide or pesticide use
- * Extractive Industry: Handling/storage of ores and carbonaceous materials
- * Energy Industry: production of gas or heat treatments of fossil fuels
- * Production of Metals
- * Non-metals production
- * Glass Making/Ceramics production
- * Production and use of chemicals

- * Engineering and manufacturing processes
- * Food processing industry
- * Animal by-product processing
- * Paper, pulp and printing industry
- * Timber and timber production
- * Textiles production
- * Rubber Industry
- * Transport Sector
- * Waste Disposal
- * Miscellaneous

Approximately 10 percent of total wastes are shipped internationally. The bulk of international transfers takes place between industrialized countries. The number of waste shipments between the United States and Canada are estimated at 6,000 per year.

A small percentage of total waste shipments move from industrialized to either transitional or developing countries. Often, the country of import lacks adequate waste disposal facilities for domestic waste treatment, let alone for imported wastes.



The number of waste shipments between Canada and the U.S. each year is roughly 6,000.



To establish international controls on the international transfer of hazardous wastes, governments agreed to the 1981 *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal*. The Convention entered into force in 1992. As of October 1993 there were 44 parties to the convention. General provisions of the *Convention* include commitments to:

- reduce the generation of wastes to a minimum;
- reduce the transboundary shipment to a minimum, and to ensure that wastes are disposed of as close as possible to the source of generation;
- ensure the environmentally-sound management of hazardous wastes;

- ensure that equal requirements are applied to hazardous wastes exported and to those disposed of domestically (principle of non-discrimination);
- cooperate in promoting low-waste technologies, with the goal of reducing and eliminating the generation of hazardous wastes;
- promote technical cooperation and information exchange, particularly with developing countries.

The *Convention* establishes several waste export provisions, including the prohibition of waste shipments: to non-Parties to the Convention; to countries without equivalent environmental standards; to the Antarctica; if the importing state has prohibited such imports; if appropriate disposal facilities are available at the country of origin.

In addition, a system of Prior Informed Notification and Prior Informed Consent procedures are established under the Convention to ensure that importing countries have prior knowledge of and give prior authorization for incoming wastes.

Export Bans: In March 1994, at a Conference of the Parties to the Convention, agreement was reached on two important export restrictions.

- (1) Effective immediately, all waste shipments from OECD to non-OECD countries are banned:
- (2) Effective 31 December 1997, all waste shipments for the purpose of recycling or waste resource recovery from OECD to non-OECD countries are prohibited.

Protocol on Liability and Compensation: An important development under the *Basel Convention*, of interest to lenders, is agreement by governments to develop an International Protocol on liability and compensation for hazardous waste shipments. Under consideration is: liability of the exporter, consideration of the establishment of an emergency fund to provide emergency assistance; the establishment of a Compensation Fund for civil liability issues; and the establishment of dispute

settlement provisions, under the existing scope of the Convention.

(For more information on the Convention, please see International Trade and Hazardous Wastes, UNEP Environment and Trade Series Number 7, 1994).

CLIMATE CHANGE CONVENTION

For the last decade, scientists have become increasingly alarmed about the climatic effects increasing atmosphere concentrations of greenhouse gases. Computer modelling suggests a link between increased concentrations of carbon and other “greenhouse gases,” and changes in the planet’s climate. Empirical evidence already shows global warming trends over the past 15 years: six of the seven hottest years ever recorded have taken place in the past decade.

The prospect of more severe, and more frequent droughts is closer. In 1994, an estimated 7.5 million people in Ethiopia alone face starvation because of drought. In Northern China, the region’s worst drought presently threatens water-supplies in 570 cities. Future economic development in the Northern region is now threatened, and water reserves in Beijing are projected to dry up entirely in a few years because of long-term drought.

Although considerable uncertainty remains, the likely impacts of climate change may include an average rise in the level of the Earth’s oceans. This could entirely submerge low-lying islands and inundate some low-lying coastal areas such as in the Netherlands, the Nile Delta, and the Eastern Seaboard of the United States.

Estimated insurance costs have already been calculated to be in the billions of dollars in damages. In addition, climate change is also likely to affect rainy seasons and agricultural growing patterns, to shift irrigation patterns, and to bring a northwards movement of insect vectors, (eg. the possible return of malaria-bearing mosquitoes to southern Europe and North America).

In response to these threats, 150 governments signed the *Framework Convention on Climate Change* in June 1992. As the title suggests, the Convention provides a “framework” for future action, as opposed to a list of specific commitments.

The Convention recognizes the responsibility of industrialized countries in reducing carbon dioxide emissions, and specifies that OECD countries should “aim” to stabilize greenhouse gas emissions at 1990 levels, by the year 2000. Countries also have an obligation to protect greenhouse gas “sinks” such as forests and marine environments.



Six of the seven hottest years ever recorded have taken place in the past decade



A number of options are being reviewed for future action under the Convention. Already numerous governments have committed national energy policies to greenhouse gas stabilization and to a 20 percent reduction. However, given the enormous economic implications associated with the targets of the Convention – greenhouse gas emissions come from virtually all industry, household, transport and other sectors – progress will be extremely difficult. Some options which will likely be considered include:

Targets and Timetables: The commitment by Parties to meet specific greenhouse gas stabilization and eventual reduction targets, with agreed-upon timetables to meet those targets.

Carbon Taxes: Both the EC and U.S. have proposed an international system of carbon taxes to help meet stabilization targets. Unlike sulphur dioxide emissions, which can be filtered through the use of end-of-pipe scrubbers, carbon dioxide emissions cannot be removed with current technologies in a cost-efficient manner. Market-based instruments are therefore widely regarded as being an important option in greenhouse reduction strategies.

Tradable Emission Permits: The establishment of a

global system of tradable emissions permits, similar to tradable permit systems in place in the U.S. and elsewhere. However, considerable controversy has already arisen over the distribution of permits. It remains unclear whether they should be based on a per capita basis – as countries like China and India argue – on an existing emissions basis, as OECD countries argue, or on a combination of both.

Joint Implementation: The assumption of joint implementation is to address diminishing returns of those countries which have made energy efficiency gains. Rather than directing additional resources towards marginal benefits in greenhouse gas emissions at home, countries and companies would provide funding to countries in desperate need of financing to make initial gains. The overall environmental benefits would be the same, and gains would be made with greater cost efficiency. Joint implementation at the private-sector level has already taken place: a utility in California has assisted in energy efficiency in Poland.

MONTREAL PROTOCOL (*Ozone Layer*)

The depletion of the ozone layer is caused by increased loadings of chlorine and other chemicals in the Earth's stratosphere. Major sources of such chlorine are chlorofluorocarbons (CFCs), which are widely used in air conditioners, refrigerators, as cleaning solvents for electronic parts, and in other uses. In addition to CFCs, other chemicals also cause ozone layer depletion: they include halons (used in fire extinguishes), methyl chloroform, and others.

The effects of ozone layer depletion are linked to increased levels of ultra-violet radiation (UV-B) reaching the Earth's surface. (The ozone layer filters this harmful radiation).

It is estimated that a 10 percent decrease in the ozone layer will lead to a 26 percent increase in cases on non-melanoma skin cancer. That is equivalent to 300,000 cases per year. Incidents of more fatal cutaneous melanoma skin cancer are also on the increase. Recent estimates suggest that 700,000 new cases of skin cancer in the U.S. alone are the result of

increased UV-B radiation linked to ozone layer depletion.

Other effects include increased cases of eye cataracts, an overall weakening of the human immunity system, a negative impact on plant and crop growth rates, and a disruption in the marine food chain.



One person dies of skin cancer every hour.



The Protocol: Negotiated in 1987, the *Montreal Protocol on Substances that Deplete the Ozone Layer* is designed to shut down the billion-dollar chemical industry which manufactures CFCs and other ozone-destroying substances. Under the original convention, specific targets covering "controlled substances" were listed, and a timetable for the reduction and eventual phase-out of those substances was agreed to. In light of new scientific evidence which suggests that the depletion of the ozone layer is worse than suspected in 1987, the Protocol has been amended and considerably strengthened twice.

The Protocol contains several innovative and forceful mechanisms, including provisions concerning the banning of trade in controlled substances with non-Parties; provisions restricting exports of controlled substances to non-Parties and governing trade between Parties; monitoring and enforcement provisions; and provisions intended to assist developing countries to meet the disciplines of the Protocol.

One of the important features of the Protocol is the establishment of a Multilateral Fund to assist developing economies switch to safer, CFC-free technologies. In 1994, the Fund was replenished by governments for the next three years, with a funding level of \$510 million. (For more information, please see Trade Measures and the Montreal Protocol, UNEP Environment and Trade Series, Number 6, 1994.)

CONVENTION ON LONG-RANGE TRANSBOUNDARY AIR POLLUTION

Global emissions of sulphur and nitrogen from the burning of fossil fuels resumed record high levels in 1991, following a drop in overall emissions in 1990. Each year, some 70 million tonnes of sulphur dioxide are released into the atmosphere, together with 27 million tonnes of nitrogen in the form of nitrogen oxides. Although gains have been made in most industrialized countries, they have largely been offset by increased energy consumption in emerging market economies, as well as by increased use of sulphur-rich coal in China.

The main objective of the Convention is to control long-range damages from emissions of sulphur dioxide and other pollutants. The Convention was signed in 1979. As of May 1994, it had been ratified by 38 countries. Activities under the Convention include (i) monitoring long-range air pollution, consisting of data collection, measurement of air and precipitation quality, and other activities; (ii) cooperation on scientific research to measure the environmental and other effects of air pollution, in terms of critical loads. In addition to sulphur dioxide, other pollutants under the Convention include nitrogen compounds; (iii) international cooperation on pollution abatement technologies. This consists of developing and exchanging information on “cradle-to-grave” technologies.

A key Protocol under the Convention is the *Protocol on the Reduction of Sulphur Emissions or their Transboundary Fluxes*, which calls upon governments to reduce sulphur emissions by at least 30 percent, using 1980 emissions levels, by 1993. A new and tougher Protocol was adopted by governments in June 1994. It encompasses two-stages:

(i) Emission ceilings ranging from 30 to 87 percent of 1980 emissions levels have been set for each Party. This differentiated schedule, covering the years 2000, 2005 and 2010. After assessing cost-effectiveness of different approaches, governments agreed on the need to reduce total emissions of sulphur deposition in Europe by at least 60 percent;

(ii) New requirements have been set for certain stationary combustion sources and for the sulphur content of gas oils. The Protocol also calls for the application of cleaner technologies to reduce emissions, including guidelines to raise energy efficiency, to increase reliance on renewable energy, etc.

Protocols also exist to reduce nitrogen oxide and volatile organic compound (VOC) emissions. Under the latter, governments are required to reduce VOC emissions by at least 30 percent by 1999. Future work under the Convention may include the development of Protocols targeting further pollution reduction targets, and the development of best-available technologies.

A new procedure, the “critical load approach,” was recently adopted by governments as forming the basis of future targets. This approach measures the specific environmental vulnerability of different regions. During the 1980s, acid rain was shown to be a major cause of environmental damage to forests, lakes, rivers as well as historic buildings.

FRESHWATER AGREEMENTS

Several international agreements, (often bilateral), cover the protection of shared freshwater resources such as rivers and lakes. Two examples are agreements covering the Rhine River and the Great Lakes.

Rhine River: The International Commission for the Protection of the Rhine was established in 1950. Pollution controls were introduced in 1976 under the *Rhine Chemicals Convention*. In 1985, France joined the *Rhine Chlorides Convention*. Following the Sandoz chemical accident in 1987 in Basel, chemicals management of the Rhine was strengthened, and more stringent water-quality controls are now in place, coupled with tougher monitoring provisions.

Great Lakes: The United States-Canada *International Joint Commission* was established in 1909 to manage the Great Lakes, the largest freshwater system in the world. In 1978, the IJC

sponsored the *Great Lakes Water Quality Agreement*, which set an ambitious plan to restore water quality in the system, safeguard against pollution, and put in place environmental management systems.



Each year, 70 billion tonnes of sulphur dioxide are released into the atmosphere.



In the 1970s, environmental problems in the Great Lakes were extremely serious: municipal sewage, industrial and agricultural chemical discharge, oil, organic sludge, phosphate detergents, and other pollution brought the Great Lakes in general, and Lake Erie in particular, to the brink of ecological collapse.

All lakes continue to be threatened by accumulating loads of toxic contamination. The IJC has identified 362 chemicals, many of which pose threats to human health, plants, fisheries, and bird-life.

The long-term, low-dose health threats of toxic contamination for millions of people in the region are beginning to be understood. One recent study, for example, found that Michigan women who regularly consumed fish from the Great Lakes during pregnancy had newborns with neurobehavioural and physical defects. Toxic and other pollution has had serious impacts on the region's bird and fish life. Two thirds of the basin's wetlands have already been lost to development.

Following the identification of extreme environmental pollution problems in the Lakes region (eg: toxic waste sites such as Love Canal) progress has been made. Nutrient levels have been significantly reduced. So too have levels of toxic contaminants. However, the rate of reduction in toxic pollution has levelled off, and current toxic contamination poses long-term threats to the survival of the Lakes ecosystem. Conditions of fisheries remain degraded.

Expected clean-up costs to address identified "hot-spots" have been estimated by the IJC at \$12-25

billion. This takes into account existing problems such as the clean-up in Canada of 43 areas listed in need of urgent clean-up action, but not longer-term problems such as the impact of climate change on the Great Lakes Basin.

MARINE PROTECTION

International attention has focused primarily on atmospheric pollution and waste management, rather than on pollution of the high-seas. Degradation of the marine environment is, however, often an acute concern in coastal areas.

Problems include: coastal development and the associated loss of wetlands and habitats; increased discharges of municipal sewage, as well as litter and plastic garbage; dredging of sediments; accidents from oil spills, as well as intentional (and illegal) cleaning of ballast from ships; phytoplankton blooms and toxin outbreaks in some coastal zones; increased pollution, including that from heavy metals, hydrocarbons, hydrochlorinated organic compounds, and toxins.

Overfishing in most seas has also led to severe depletion, and in some cases, to the total collapse of fish stocks. Accidents from oil tankers, as well as intentional clearing of ballast from ships, has also contributed to marine pollution. Eutrophication in seas is also a serious problem in some coastal areas, as well as in confined marine environments like the Baltic, the Northern Adriatic, the Black Sea, the Gulf of Mexico, regions of Indonesia and Caribbean seas, parts of the North Sea, and the mouth of the St. Lawrence and Amazon rivers, to name just a few.

In response to these problems, numerous international agreements have been adopted by governments to coordinate actions to protect seas and oceans. The International Law of the Sea Convention represents one of the most complex and encompassing international legal agreements ever struck.

Provisions include extension of coastal sovereignty from three to 12 miles; full control of off-shore

fisheries to 200-miles; guarantee of the right of transit through straits used for international navigation; and strongly-worded language related to over-fishing. One of the most controversial provisions is the inclusion of international rules related to the mining of the ocean floor.

The *Convention*, negotiated in 1982, is expected to be ratified in 1994, with support expected from the United States. It sets a framework for the rational exploitation and conservation of the sea's resources, and contains provisions to protect the marine environment. Commitments include pollution control on the high-seas as well as tighter controls concerning fishing on the high-seas, navigation, and other measures.

The Convention has long been criticised for its lack of specific measures to control land-based sources of marine pollution, which make up 70 percent of all marine pollution. As yet, no international regime exists to control land-based sources of pollution. Along the U.S. coastline, for example, an estimated 273 million pounds of toxic chemicals such as ammonia and chloroform were dumped into streams and into oceans. This represents an estimated 12 percent increase from the previous year. Other major pollution sources include municipal sewage.

In response, several regional approaches to pollution-problems do exist, including UNEP's *Regional Seas Programmes*. Launched in 1974, the programme now covers regional seas in all regions. It is modelled on the 1974 *Helsinki Convention on the Baltic Sea*, the first regional accord to introduce control measures to cover severe pollution sources.

The centre-piece of the Regional Seas programme is the *Mediterranean Action Plan*, adopted in 1975. Since then, several protocols have been signed on particular polluting sources. Although the programme has contributed to improved environmental quality in the Mediterranean, severe environmental problems persist an estimated ten billion tonnes of domestic and industrial waste, for the most part untreated, are dumped into the Mediterranean each year. The combination of

sewage and industrial wastes; over 70 rivers which discharge; over-flowing tourists at high season have all combined to make the Mediterranean the most polluted sea on the planet.

Convention on the Protection of the Marine Environment of the Baltic Sea Area (1992 Helsinki Convention): Adopted 1992, Helsinki. Not yet in force. Objectives include taking all measures, individually or by means of regional co-operation, to prevent and eliminate pollution in order to promote the ecological restoration of the Baltic Sea area. Parties shall apply the precautionary principle (take preventive measure when there is reason to assume that hazards may be created in the marine environment); promote the use of best environmental practice (BEP) and best available technology (BAT); and apply the Polluter Pays principles.

CONVENTION ON BIOLOGICAL DIVERSITY

Although only 1.4 million species have been identified, estimates for the total number of species range from 10 to 30 million. Recent estimates, however, suggest accelerating extinction rates, with as many as 50 species lost each day. The causes are varied, but include loss of habitats — especially the loss of tropical forests, wetlands and coral reefs.

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Estimates suggest between 50 to as many as 100 species become extinct each day.

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Potential economic benefits of biodiversity are enormous. In June 1994, for example, the U.S. National Cancer Institute announced that a tree species (the Bintangor) in the Malaysian rain forest may be able to block the spread of the virus which causes AIDS. Agreements were recently signed allowing scientists to conduct experiments on the tree.

This one example highlights the economic and other benefits of conserving and sustainably managing biodiversity. In response to these challenges, in 1992, governments signed the *Convention on Biodiversity*.

The Convention combines obligations for the conservation of biodiversity with a broad economic agreement concerning the sustainable use of genetic and other resources.

Provisions are set out for access to genetic resources. These resources are becoming increasingly important in the development of biotechnologies, as well as in the pharmaceutical and agri-seed sectors. Although the development of provisions are general in nature, the Convention has already stimulated on a specific agreement, signed in July 1994, on access to genetic resources.

Other important provisions in the Convention include general obligations for “biosafety” – that is, measures to control the modification of living and other organisms for commercial application by the biotechnology sector. General provisions on intellectual property rights are also included.

From the outset, the Convention has been controversial. In 1992, for example, the Bush Administration stated that the Intellectual Property Rights provisions in the Convention would undermine U.S. jobs. It therefore refused to sign the Convention.

That position was subsequently reversed by the Clinton Administration. Yet, the whole issue of IPR systems, access issues, and other economic questions of importance to the billion-dollar biotech and other sectors will be a source of increased analysis.

(For more information, please see [Institutional Mechanisms Supporting Trade in Genetic Materials: Issues Under the Biodiversity and GATT/TRIPS](#), UNEP Environment & Trade Series Number Four, 1994).

GATT/WTO AND THE ENVIRONMENT

An area of intense concern is the relationship between environmental protection policies and trade liberalization. In 1991, a GATT Dispute Panel considered a complaint from Mexico about attempts by the U.S. to ban imports of tuna caught using driftnets, which also kill large numbers of dolphins.

The Panel found that the U.S. bans were GATT-inconsistent. Since then, the GATT has come under growing pressure to address trade-environment links.

In 1991, a GATT working group on trade and the environment was re-established. Over the past three years it discussed three agenda items (i) the relationship between international environmental agreements which use trade measures (such as bans and quotas) and GATT rules. (ii) transparency of national environmental regulations; and (iii) eco-labelling and eco-packaging.

In the Final Act of the Uruguay Round, specific environmental provisions were included. These include a reference, in the non-legally binding preamble, committing Parties to environmental protection and “sustainable development.” Within the text, two agreements govern national laws related to the environment: the Technical Barriers to Trade Agreement (TBT), and the Sanitary and Phytosanitary Agreement (SBS).



Trade and Environment has emerged as among the most important intersections of environment and economy policy since the Earth Summit.



Both place increased emphasis on international standards, while leaving individual countries the right to establish their own national standards. Such standards relate to product standards (TBT), as well as some provisions for process-related standards.

Other provisions include: an allowance, under the subsidies codes, for 20 percent subsidies on retrofitting of environmental technologies; recognition of the importance of the environmental services sector; and agreement to establish a Committee on Trade and Environment.

Over the next two years, the Committee will review a wide range of environmental policies, including Domestically-Prohibited Goods, eco-labels, environmental taxes, and other issues.

GLOBAL ENVIRONMENT FACILITY

In March 1994, governments agreed to re-design the governance, and replenish the funding base, of the Global Environment Facility (GEF). The GEF, which is administered by the World Bank, UN Development Programme and UNEP, was originally established as an interim mechanism, intended to assist developing and transitional economies in the financing of solutions to global environmental problems.

Under the permanent structure established earlier this year, funding levels for the GEF will be approximately US\$2 billion over three years. The financing and assistance will continue to address four global issues: climate change; pollution of international waters; destruction of biodiversity; and ozone depletion. In addition, land-degradation will also be covered under GEF funding.

Thus far, the GEF has committed \$750 million in funding to support some 100 environmental projects. Future emphasis of the GEF will include (i) the financing of response strategies under the conventions on climate change and biodiversity; and (ii) the examination of opportunities in joint leveraging of public-private sector finance to address environmental problems.

(For more information, please contact the Global Environment Facility, The World Bank Group, Washington, D.C.)

NADBank: In addition to the GEF, several national and regional environment fund's have been established for environmental projects. For example, in conjunction with the NAFTA accord, the North American Development Bank (NADBank) is being established, designed to address the environmental impacts of prior unregulated and concentrated economic activity along the Mexico-U.S. border region. With the assistance of the World Bank and Inter-American Development Bank, expected funding is around \$7-8 billion.

Global Environment Management Corporation: In 1994, the U.S. Administration announced US\$50 million worth of guarantees for a new fund to help cover start-up costs of environmentally-related business in developing countries. Key sectors to be targeted under the fund are clean water and clean energy, focusing on Latin America, Asia and Central and Eastern Europe.

SECTION FOUR INVESTMENT TRENDS/MANAGEMENT TOOLS

The section provides of an overview of some trends in environmental investment; information on waste reduction and cleaner production; and introductory information on environmental accounting, environmental impact assessment, environmental auditing and corporate environmental reporting.

Of these, assessment and auditing have become increasingly important tools for lenders.

(1) GREEN INVESTMENT

Overview: The value of environment activities, including pollution abatement, waste management, cleaner production, and other technologies and services, is forecast by the U.K. firm Ecotec to reach US\$320 billion per year by the year 2000, and \$570 billion in 2010.

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Environmental expenditures are forecast to reach US\$320 billion per year, in six years.

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At current levels, the environmental sector is comparable to pharmaceutical, aerospace, forestry or other sectors in many countries. The main activities related to environmental expenditures include: waste management; water and wastewater treatment; air pollution control equipment; contaminated land remediation; electronic monitoring; and environmental services.

One response to public concern about environmental issues is the emergence of so-called "Green" investment funds. Since 1988, several dozen investment funds – including pension funds – have been launched, with portfolios concentrating on environmental service companies. Several major companies – including Merrill Lynch and John Hancock – have established environmental funds.

To date, in Europe alone, over 70 ethical/

environment investment funds have been established. Estimated value is US\$1 billion.

Although they remain a marginal part of total investment funds, green funds have managed to perform well.

For example, the initial offering of Hancock's Freedom Fund brought in \$46 million. Merrill Lynch's 1989 issue of its Environmental Technology Fund was massively oversubscribed – by some \$70 million – within three days of its offer.

The Merlin Ecology Fund, the first Fund in Europe to invest only in companies which positively benefit the environment, as opposed avoiding environmentally damaging firms, has performed well.

Some forecasts predict that green funds are now set to keep pace with health-related funds, with average annual growth rates of 15 percent or more. Of this, the bulk of investment is longer term.

As expected, most of green-related investments are concentrated in the United States, Europe, Australia and few other countries. However, an area of particular importance to investors is the expected increase in expenditures on pollution control, waste management, clean-up, and other activities in transitional and emerging market economies.

In comparison with a relative slowdown in OECD economies over the last few years, emerging markets have been a powerhouse of economic growth, with growth rates of 10 percent per annum or higher. Some estimates suggest that, by the year 2010, some 20 percent of total global expenditures on environmentally-related equipment – waste water treatment, scrubber, waste incinerators, etc. – will be in developing countries.

CLEANER PRODUCTION

One area in which returns on investment are likely to remain high is that of cleaner production technologies.

The objective of Cleaner Production, which was endorsed by governments in Agenda 21, is to develop new process technologies which contribute both to economic and to environmental improvements.

The rationale is simple: industries that reduce per unit natural resource and energy input, which improve overall production process efficiency, which reduce waste generation, and which concentrate on waste re-use and recycling, will improve both environmental and economic efficiency.

Several cases in the application of cleaner production in developing countries help illustrate the point:

Harihar Polyfibers employs 1,600 workers at a plant on the Tungabhadra River in Karnataka, (India). Over a six-year period, by installing cleaner production technologies, costs for chemical and fuel inputs decreased, while overall production increased by 20 percent. Overall energy consumption was reduced by 60 percent, chemical use by 55 percent, and effluent loads by 55 percent.

FSM Sosnowiec manufactures automobile lamps, door locks and window winders in Poland. The lamp bodies are made of zinc-aluminum alloy, and are then copper-nickel-chromium plated. The door locks and window winders are made of steel and then zinc plated.

Waste streams from the processes contain cyanide, chromium-6, copper, zinc and nickel. Following a pollution prevention audit, low concentration plating and pacifying techniques, static (instead of circulating) rinses, and final stage ion exchange columns in the rinsing processes were installed.

As a direct result, usage of water and raw materials significantly decreased. Moreover, waste stream emissions were massively reduced: 80 percent reductions in chromic acid, 95 percent for copper, 80 percent for cyanide, 98 percent for nickel, 96 percent for zinc, and 93 percent for waste water. From a capital investment of \$36,000, yearly savings were approximately \$193,000.

Century Textiles and Industries Ltd. employs 7,000 workers in India, and, with an annual turnover of about \$100 million going to exports, is the world's largest exporter of 100 percent cotton fabrics.

The company made extensive efforts to eliminate sodium sulphide in the dyeing process for black articles. Sodium sulphide is highly toxic and requires extensive waste treatment. A substitute chemical was identified – hydrol, a by-product of the maize starch industry – which has resulted in sulphide emission being reduced from 30 parts per million to less than two.

This was achieved without expensive effluent treatment technology. Since the substitute product was essentially part of the waste stream of another industry, the switch brought savings in capital expenses of an estimated \$12,000, and running costs of about \$1,800 p.a.

In both industrialized and developing countries, there is a growing number of similar “win-win” examples, in which improved environmental performance coincides with improved economic performance.

In Indonesia, for example, a cement company improved process control, saving \$350,000 p.a. A metal treatment factory in Singapore installed cleaner production equipment, which resulted in annual savings of \$87,000.

Following a recent survey by UNEP's Cleaner Production programme in China, it was concluded that a capital investment of \$17,000 brought over \$350,000 in savings; while at the same time eliminating more than 50 percent of the COD load in the wastewater of factories involved.

POLLUTION PREVENTION

Although cleaner production offers enormous promise, its actual application remains in its infancy. Indeed, the extent to which such programmes can ensure paybacks is still not clearly understood, and such factors as scale of production, infrastructure, date of capital equipment and others also need to be

weighed. While many companies are talking about cleaner production, actual application remains relatively limited.

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In 1994, DuPont announced plans to reduce waste emissions by an additional 50 million pounds.

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By contrast, integrated waste management systems is an example of a potential “win-win” situation which continues to gain ground among industry.

In 1994, for example, DuPont announced plans to reduce the volume of solid wastes put into municipal land-fills. The company plans to reduce product packaging waste by an additional 50 million pounds per year by the year 2000. This will be done through the WasteWi\$e programme run by the U.S. EPA. It adds to the commitment already made by DuPont to reduce waste by 230 million pounds per year.

Also in 1994, three major European automobile makers – Renault, BMW and Fiat – jointly announced plans to ensure that 95 percent of an obsolete vehicle is recyclable. Plans will include the development of common recycling techniques so that recycling of each other’s models can be done.

Perhaps the best known example of pollution prevention through waste reduction strategies is the “3P” strategy adopted by 3M Corporation – the *Pollution Prevention Pays*. Begun in 1975, the 3P program was 3M’s first proactive environmental policy. It encourages employees to solve environmental pollution problems through prevention, recycling, reuse, and innovative concepts in product manufacturing and development.

Between 1975 and 1992, 3M undertook 3500 successful 3P projects, prevented 575,000 tons of pollution, and saved \$550 million dollars. Currently, 3M is hoping that by its latest 3P plus initiatives it can cut generation of waste by 50 percent and reduce releases by 90 percent by the year 2000.

Similar strategies are now in place in a range of companies across the globe. These include many transnational corporations such as IBM, General Dynamics, and General Electric. Moreover, these strategies are often inexpensive.

In the UK, for example, after the completion of waste minimization schemes in the Aire and Calder (canal) project, the Centre for Exploitation of Science and Technology (CEST) concluded that if the simple, low-cost methods used there were replicated across British industry, over £1 billion could be saved annually. Recent savings by BP (saving 7,000 tonnes of chemicals per annum, by checking the seals on rising valves), and by ICI, reducing wastes at certain sites by up to 50 percent, underline opportunities for cost-effective improvements to environmental performance.

One indication of improved waste management systems within industry stems from the results of a December 1993 survey by the waste management company Shanks and McEwan.

This company found that the waste mix in the U.K. had been undergoing a steady change in recent years: deliveries to incinerators from large companies had declined by as much as 20 percent. This drop was thought to have occurred as a result of waste reduction schemes.

On the other hand, wastes from smaller and mid-sized companies expanded significantly, suggesting that many smaller companies are identifying and organizing waste for disposal, rather than releasing it illegally into the environment.

Responsible Care

One of the most environmentally-sensitive industries is, of course, the chemicals sector. In response to a long-list of environmental problems, made famous by Bhopal and Basel, the chemicals industry continues to push towards improving its environmental performance and public image. Lenders have expressed caution about the potential indirect risks of the chemicals sector.

One way in which lender due diligence can, in part, be established may be by identifying those companies which adhere to more targeted codes of conduct regarding chemicals management.

Following an initiative undertaken by the Canadian Chemical Producers Association (CCPA) in 1985, chemical industry associations in the United States, United Kingdom, Australia, Japan, Netherlands, France, New Zealand, and Germany are at various stages of implementing a *Responsible Care* programme.

This programme commits companies, in all aspects of safety, health, and environmental protection, to seek continuous improvement in performance, to educate all staff, and to work with customers and communities regarding product use and overall operation.

Responsible Care programmes have not been without drawbacks. Accountability has been weak, and community relations with the general public are still marked by distrust. Nevertheless, in many countries, action is underway to remedy this.

In the United States, for example, a CMA task force is in operation to monitor compliance with the code of conduct. Moreover, following a serious incident at a Union Carbide plant in West Virginia and the introduction of SARA Title III legislation passed as a result in 1986, a community awareness program has now been instituted.

Such trends are likely to be followed in other countries where Responsible Care is in operation. In the U.K., for example, the Chemical Industry Association is pursuing recognition of the Responsible Care program for certification under the ISO 9000/BS 5750 quality assurance standard. British Standards certification is seen as carrying more authority than the industries' own bodies.

Principles of Responsible Care include a commitment to:

* Develop and produce chemicals that can be

manufactured, transported, used, and disposed of safely;

* Make health, safety and environmental considerations a priority;

* Report promptly to officials, employees, customers, and the public, information on chemical related human health or environmental health hazards;

* Counsel customers on the safe use of chemical products;

* Operate plants and facilities in a manner that protects the environment;

* Work with others to resolve problems created by past handling and disposal of hazardous substances.

ENVIRONMENTAL ACCOUNTING

In recent years, there has been growing emphasis on the development of a new or revised System of National Accounts (SNA). Efforts to achieve the so-called greening of income accounts are part of a larger effort towards the so-called internalization of environmental externalities.

The broad goal in the development of environmental and natural resources accounts is to create automatic, across-the-board economic valuation signals, which in turn will help people conduct economic activities in an environmentally more sound manner.

Although actual reforms are likely some way off, a tremendous amount of work is currently being done to devise new systems of income accounts.

At the national levels, several countries – including Norway, Australia, Canada, the United States, and many others – continue to develop new proposed amendments to GDP. At the international level, in 1993, the UN Statistical Office issued its *Integrated Environmental and Economic Accounting* handbook, which contains recommended guidelines for specific income amendments.

Considerable challenges remain with national income accounts, including how to quantify the changing flows of benefits stemming from the environment. Since many such benefits do not involve explicit market transactions (ie. fresh air is not exchanged in the marketplace), such measurements are arguably outside the conventional scope of GDP.

Some of these issues relate to the inability of income accounts to take account of welfare issues, since their function is to measure total economic activity.

However, consensus is forming on several broad issues including: the need for income accounts to reflect environmental degradation, in the same way that depreciation of other assets are reflected; the need to exclude or reduce some defensive expenditures associated with clean-up actions; the need to value environmental services.

This is not, however, to suggest that consensus exists as to how to include different measurements of environmental degradation and benefits in income accounts. Related issues include the use and limitations of contingent valuation techniques, the degree to which discount rates should be reduced to reflect longer-term sustainability goals, and the central question of the role of sustainability – and its intergenerational implications and global context – in relation to annual, national income accounts.

Despite these and other questions, it is fairly clear that problems do exist with income accounts, in the following areas:

- * current national income accounts are able to measure the products of economic activity, but not the by-products such as pollution;
- * some environmental protection expenditures are measured a final output. That is, clean-up costs or defensive expenditures are measured as final output;
- * depreciation of environmental assets and natural capital is not measured;

* environmental liabilities, such as hazardous waste sites, are not measured in income accounts as economic liabilities.

Three general criticisms characterize the critique of national income accounts:

- (i) the product is incorrectly measured, and therefore Gross Domestic Product should be adjusted;
- (ii) depreciation is incorrectly or incompletely measured, and Net Domestic Product should be adjusted; and
- (iii) wealth is incorrectly measured, and so National Wealth should be adjusted.

Implementing Environmental and Resource Accounting (ERA)

Numerous approaches to amending national accounts continue to be mooted. Although progress towards the 'greening' of GDP will, because of the nature of accounting principles, be very slow, there is now consensus that reforms will be made. It is a question of when, and not if.

For lenders, longer term implications of such reforms in terms of asset values – particularly for resource extraction and pollution intensive sectors – may be significant.

GDP: User Cost in Resource Extraction: The lack of treatment of natural resource depletion in national accounts is an obvious omission, given that for many countries, natural resource extraction and harvest is a large percentage of GDP.

Resource extraction processes – such as the clear cutting of forests or mining of non-renewable resources – represent a drawing down of natural assets which is not reflected in GDP accounts. Work by Repetto of WRI, and by El Serafy indicate the following: true income from resource extraction should equal the *perpetual* income attainable from investing a portion of the net returns from this extraction.

The measurement of perpetuity is obviously difficult, since it requires at the outset clear indicators of whether total natural resource wealth is increasing or decreasing.

Environmental Services and Damages: In the GATT Uruguay Round Final Agreements, governments recognized the growing importance of the environmental services sector. A key problem from one environmental perspective is the definition of environmental services.

Although the GATT Contracting Parties referred to services in line with waste management or engineering consulting services, accounting reforms look at services in a much broader context:

(i) Environmental Services refers to the value of services provided by the environment to the economy. Such services focus for the most part on waste disposal services, which can be measured as the incremental cost gap between what it would cost the producer to dispose of wastes by means other than emitting it directly to the environment;

(ii) Environmental Damages refers to the value of damages caused by a deterioration in environmental quality. This may include direct damages, such as increased health care costs or respiratory diseases associated with jumps in air pollution; or indirect damages, such as loss of the use of a clean river because of pollution.

Include Environmental Deterioration in Gross Product: If natural resources are to be measured as part of a country's asset base, together with reproducible capital, then GDP should include the deterioration of those assets through extraction and pollution.

One result of this approach is that GDP would decline in those countries which do not allocate enough to environmental protection to maintain current levels of environmental quality. By contrast, GDP would remain unchanged for countries which spend enough to maintain current levels of environmental quality.

One of the problems in this approach refers back to the central issue of environmental valuation: it is clear that the value of environmental degradation is not comparable to the value of environmental protection expenditures. Although this holds true for infrastructure, whereby maintenance costs offsets depreciation, this is not true for environmental defensive expenditures.

Defensive Expenditures: Intermediate expenditures on pollution abatement by the private sector are not part of domestic product, a variety of expenditures by households and governments on environmental protection are currently measured as part of GDP.

One question associated with this issue is the welfare benefits of such expenditures: since many environmental expenditures such as oil spill clean-ups or remediation of contaminated land-fills do not add to welfare, they should not be included in GDP.

In response, it is of course noted that the purpose of GDP is to measure economic activity, and not welfare gains. However, an associated issue is the measurement of intermediate and final output.

To illustrate, if a government allocates a certain amount on environmental expenditures for waste management, but the services are rendered by the private sector, the question has been raised as to whether the services should be regarded as intrinsically intermediate, and whether or not GDP should be reduced.

Net Domestic Product: *Natural Resource Depletion:* Robert Repetto et al of WRI were among the first advocates to argue that the depletion of natural resources should be treated as equivalent to depreciation of reproducible capital (Wasting Assets: Natural Resources in the National Accounts). Repetto argues that income should be calculated as that which exceeds asset consumption. He believes that a deduction of natural resource depletion should be included in NNP. In Repetto's analysis of corrected NNP to include resource depletion, for example, Indonesia's NNP was adjusted downward from a conventional growth rate measurement of 7.1 percent to one of 4.0 percent.

This approach embodies two assumptions: (i) that natural resource stocks should be viewed as national assets, (in the same manner as reproducible assets) and (ii) that the basis of valuation for the natural assets should be based on the “net price method,” whereby the net price is measured as the market price of the resource, less the average unit cost of production.

For non-renewable resources, such as oil, NNP should be adjusted to measure depletion as the net price times the quantity extracted in the accounting period. Discoveries of new resources are treated as negative depletion, so NNP can exceed GDP. However, such discoveries can also be regarded as revaluations, or capital gains.

Environmental Degradation refers to deducting a value of environmental degradation from GNP to give a new measure of net product. This recommendation gained early recognition in the UN draft guidelines for a Satellite System of Integrated Environment and Economy Accounts (1990).

The proposal is to value environmental degradation as the cost of returning the environment to its original state at the beginning of the accounting period, ie. the cost of potential abatement or restoration to achieve environmental quality.

National Wealth: This issue deals with the question of how to bring resources and the environment into national accounts. In addition to depreciation, challenges also include how to measure the extent of resource endowments, and how to value stocks of natural resources.

A great deal of work has already been done to measure total resources and reserves, especially in the oil sector. The process of amending national income accounts has however proven to be extremely slow. Yet, work has been increasing in clarifying how to include some costs of resource depletion, pollution control activities and other environmental considerations in national accounts.

As a prerequisite, an updated inventory of national

resource endowments, extraction rates, renewable resource replenishment capabilities and critical thresholds must be established and quantified.

Traditional national income and economic measurements (including discount rates) can provide an indication of the maximum amount that can be consumed by a nation without eventual impoverishment.

Within the context of sustainable development, income can be measured as the flow of goods and services that the economy generates without reducing its productive capacity (ie: income that could be produced indefinitely). This view tends to eliminate the dichotomy between capital and income, recognizing that income should be considered as a stream of services obtained from capital stocks.

International Efforts: For several years, efforts have been under way at the international level to amend the UN System of National Accounts (SNA). Recognizing that environmental costs need to be recorded, experiments have been done with so-called “satellite accounts” which list physical and renewable resources in parallel to conventional national balance sheets.

While important differences of opinion exist as to how exactly economic activity measurements should be adjusted, it is agreed that the underlying physical database needed in order to calculate resource depletion is similar for most approaches. At the international level, the World Bank, the UN Statistical Office, UNDP’s human development index, the World Resources Institute, UNEP, and others have been working on environmental accounting from differing, but complementary approaches.

In 1993, the UN Statistical Department issued the *Integrated Environmental and Economic Accounting* handbook. It notes that a consolidated System of National Accounts (SNAA) has not yet been achieved, although considerable progress has been made both in the design of satellite accounts, as well as in accounting refinements related to the cost,

capital, and valuation concepts of accounts which include natural assets.

Nonetheless, a *System for Integrated Environmental and Economic Accounting (SEEA)* has been compiled. It assimilates some of the approaches which are under review.

A revised System of National Accounts was introduced in February 1994 by the World Bank and other UN agencies. It will take into account social factors such as population and poverty, as well as environmental concerns, including the costs of ecological degradation. This, the first revision of the SNA for 25 years, is likely to be a major breakthrough in the ways in which economies are seen to be progressing.

Environmental Impact Assessment

Environmental Impact Assessment (EIA) is a tool, developed over twenty years ago, which is used to examine the environmental impacts of a proposed project. Assessments include impacts on human health, or the environment, as well as on an increasingly wide range of social issues. Although most EIAs concentrate on negative impacts, it should be noted that they are also intended to highlight positive impacts.

The vast majority of EIAs focus on project specific activities such as road or industry siting construction plans. Recently, however, they have also been used to assess broader impacts of macroeconomic policies such as impacts of trade liberalization (eg: the 1992 Canadian Environmental Review of NAFTA), structural adjustment, agricultural subsidization, and other price stabilization policies. However, in practice, EIAs remain most effective at the project-specific level.

EIA legislative requirements were introduced in the United States under the U.S. *National Environmental Policy Act*. Although formalized under NEPA, environmental assessments were used years before to assess impacts of major engineering projects such as hydroelectric dams, nuclear power stations, etc.

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In 1994, an amended system of national accounts was introduced by the UN Statistical Office to reflect environmental benefits and damages in satellite accounts.

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Today, most countries have in place national and state EIA requirements. In practice, however, the quality and accuracy of EIAs varies greatly, not only because of differences in legislative requirements, but more importantly because Statements too often still pay lip-service to environmental issues in order to cover regulatory requirements.

NEPA requires that an Environmental Impact Statement (EIS) be prepared prior to taking any major action which could affect the environment. However, it is important to distinguish an EIS which is a single, and static part of a broader EIA process. This process includes both an estimation of the likely impacts of an economic activity (included in the Statement), as well as follow-up monitoring and evaluation of the project itself, (to measure the actual effects as opposed anticipated impacts). In this sense, EIAs are seen as a useful tool in overall project management.

According to the OECD's *Good Practices for Environmental Impact Assessment of Development Tools (1992)*, the following projects are most in need of an EIA:

- * Projects which cause a substantial change in renewable resources use;
- * projects which substantially change farming and fishing practices;
- * the exploitation of hydrological resources;
- * infrastructure;
- * industrial activities;
- * extractive industries;
- * waste management and disposal.

From the perspective of project design, EIAs are most effective when they are *integrated into the project at the outset* in order to provide practical input to planning, identification of project changes, project alternatives, and mitigation options.



Most countries have in place mandatory EIA requirements.



Seen as an anticipatory tool, EIAs are most effective when they are introduced at the beginning of a project. In practice, they are rarely applied this way. EIAs have tended to focus on producing a document to meet minimum regulatory requirements, rather than on improving the overall efficiency of a proposed project.

In the twenty years that EIAs have been used, their accuracy and effectiveness has improved dramatically. Several thousand EIA studies have been undertaken. In the process, advances have been made in the following areas.

Valued Ecosystem Components (VECs): In the first step towards building accuracy in EIA, a list of environmental components/indicators that are of particular importance to the project, to the various groups involved in the assessment of the project, and other indicators in relation to the proposed action, are compiled. The idea behind the initial compilation of indicators is to sharpen the focus and scope of the assessment by defining the goals of the assessment.

Cumulative Impacts: Until recently, EIAs have not generally been concerned with longer-term, cumulative effects of a proposed action. However, given the fact that projects may contribute to the collapse of an ecosystem, or to rapid depletion of a resource, work has recently increased on assessing such impacts.

Social Impact Assessment: For large projects such as roads, dams, factories, waste sites, or other projects; a major issue involves social concerns of the public related to often difficult-to-quantify considerations,

such as quality of life, jobs, etc. The development of social indicators has contributed to the development of EIAs in Indonesia.

Environmental Risk Assessment: Work has increased on the codification of statistically improbable risks, (eg: that of a tanker spill or system failure), so that such risks can be included in the overall EIA statement.

Large-Scale EIAs: At the international level, EIAs are of two types: (i) those relating to a specific project which either has transboundary implications in design, or transboundary implications in terms of pollution or environmental degradation; and (ii) assessment of environmental degradation already underway (eg: acid rain or ozone layer depletion). In such cases transboundary or global impacts are used to help coordinate national responses (ie. abatement strategies, legislation, etc.)

Technology Assessment: In 1993, UNEP's Industry and Environment Office in Paris announced plans to begin an assessment procedure for technologies to provide countries – particularly developing and transitional economy countries – with an assessment of the likely environmental impacts of new, current or obsolete technologies.

Today, a great deal of attention is being paid to identifying the needs of developing countries. Many institutions such as the OECD, the Federal Environmental Assessment Review Office in Canada (FEARO), or the International Association for Impact Assessment (IAIA), to name just a few, are working towards the development of policy coherence in EIA procedures. This will help bilateral and multilateral lending organizations avoid expensive duplication of EIA procedures. It will also allow them to work towards a kind of harmonization of EIA procedures, in terms of general approach coherence.

Costs of an EIA: Industries have long complained that EIAs are too expensive. Experience, however, shows that EIAs rarely exceed one percent of total project cost, and mitigation rarely exceeds three

percent. Experience also shows that the benefits of anticipating and avoiding environmental problems early in the project usually strengthens the economic aspects of the project, while avoiding far more expensive clean-up and mitigation costs.

What Works, What Doesn't: For commercial bankers, as well as for different governments, differences in EIA requirements among countries and industries are a source of confusion. This is especially true among lenders seeking to determine borrower or project evidence of regulatory compliance.

The bewildering number of EIA procedures is partly a reflection of different legislative requirements. Generally speaking, however, there are at least six problems with EIAs: (a) a lack of trained personnel to conduct a credible EIA; (b) the absence of an institutional structure and formal development process to implement the EIA; (c) a lack of willingness to integrate the EIA findings in the planning process; and (d) a lack of willingness to apply the EIA without bias; (e) EIAs are too expensive; and (f) lack of consistent terminology and techniques.

It is also generally agreed that "off-the-shelf" EIAs do not work. Generic checklists and matrixes are of limited, if little practical value, since each assessment needs to weigh the unique characteristics of proposed projects.

EIA GOOD PRACTICES GUIDELINES

In 1992 the OECD Development Assistance Committee (DAC) produced guidelines for *Good Practices for Environmental Impact Assessment of Developing Projects*. Although intended for official development assistance projects, the guidelines provide useful guidance to bankers on basic approaches to EIAs. The most important points of the OECD guidelines include:

(1) *Basic Requirements:* An EIA should be an integral part of the project design. It should begin with an early identification of project alternatives and likely environmental effects of each option. EIAs

should continue through the planning cycle and encourage public participation.

(2) *Procedures:* The initial EIA should start no later than the project feasibility study, and it should be completed prior to the detailed planning of the project. The EIA should take into account other environmental surveys and data to determine the international/transboundary aspects of the project. An assessment should also be made of the cumulative affects of a number of small-scale projects.

(3) *Screening:* EIA should begin with a screening session to determine whether a more thorough EIA is required. Screening also enables authorities to reject the proposed project at an early stage if environmental impacts are too large. If hazardous materials are involved, potential risks to health and safety should be included in the screening, as well as risks of an accident. At this stage, the following questions should be asked:

(a) which alternative projects could provide comparable benefits? One example: in the energy sector there has been a great deal of emphasis on improving demand-side efficiency, (rather than increasing supply,) by building more dams or utility plants;

(b) what is the appropriate level of public safety in relation to hazardous technologies?

(c) what degree of environmental protection should be guaranteed for areas of significant environmental value, like wetlands or old-growth rain forests?

(4) *Scoping:* Once the decision has been made to proceed with the project, an EIA scoping should: identify the most significant environmental issues; the timing and extent of analysis required; sources of expertise; and mitigation options.

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What works, what doesn't, and why: a push is underway to streamline and consolidate EIAs.
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For projects which require a thorough EIA, a comprehensive gathering of data will be needed. This will include input and regulatory requirements from relevant authorities, affected public groups, NGOs and EIA specialists. The OECD notes that screening and scoping can be undertaken as one exercise.

(5) *Involving Institutions and Groups:* Environmental institutions, as well as local communities and affected groups – including equal input from both men and women – should be included. Non-governmental organizations should also be included.

(6) *EIA Statement:* The following items should be covered in the report:

- * description of the surrounding of the project and the baseline conditions of the environment (ie existing pollution, vulnerable areas);
- * an evaluation of environmental effects of supply the projects (ie freshwater, energy, raw materials);
- * an analysis of the project on the local population, including attention to gender;
- * an evaluation of the disposal of waste water, solid wastes and emissions;
- * identification of positive and negative environmental impacts, with quantification, if possible, of magnitude of impacts;
- * an analysis of the options for environmental enhancement;
- * a presentation of the legal and policy framework, including relevant environmental standards and necessary licensing;
- * an evaluation of the effects of environmentally-relevant pricing policies, taxes, and subsidies;
- * an evaluation of the resulting impacts and identification standards employed in making the assessment;

- * consideration of basic alternatives;
- * proposals for adequate mitigation or alternative design;
- * a comparison of project alternatives and mitigation measures in terms of ability to mitigate negative impacts;
- * a statement of measures for the protection and/or resettlement of affected populations;
- * a statement of how non-EIA items are addressed;
- * a non-technical EIA summary

(7) *External Review:* If possible, an outside and independent review of the EIA Statement should be made.

(8) *Monitoring and Auditing:* The EIA should contain recommendations for monitoring and auditing during the operations of the project. This will ensure conformity with the EIA requirements and test the accuracy of the assessment.

INTERNATIONAL FINANCE CORPORATION

In the IFC September 1993 paper *Environmental Analysis and Review of Projects*, a very useful overview of EIA and environmental review procedures is outlined. This is of interest to commercial lenders, particularly since the IFC is the world's largest source of direct project financing for private sector investment in developing countries. In fiscal 1993, for example, the IFC approved US\$2.1 billion in financing to 85 projects.

Under IFC operations, all potential projects are subject to an environmental review. In keeping with the procedures of the World Bank, all IFC-backed projects must meet all environmental regulations of the host country. The IFC environmental review considers the following areas if they are applicable to the proposed project:

- * Assessment of the baseline environmental situation;

- * Sustainable use of natural resources;
- * Pollution controls (liquid effluents and air emissions) and solid and chemical waste management;
- * Protection of human health, cultural properties, endangered species, and sensitive ecosystems;
- * Use of dangerous substances;
- * Major hazard assessment;
- * Occupational health and safety;
- * Fire and life safety;
- * Resettlement issues;
- * Socio-economic issues;
- * Cumulative impacts of existing projects, the proposed project, and imminent future projects;
- * Participation of the affected public;
- * Consideration of environmentally-preferable alternatives;
- * Efficient production, delivery, and use of energy;
- * Pollution prevention and waste minimization;

Under the IFC, potential projects are grouped in three categories: (a) *Category A Projects*: these may result in diverse, significant environmental impacts and therefore require a detailed EIA. Examples of sectors and projects which are considered by the IFC to have potentially serious environmental impacts include:

- * Large chemical and petrochemical plants;
- * Major oil and gas developments, including large-scale pipelines;
- * Pulp and paper plants;

- * Logging operations;
- * Large ferrous and non-ferrous operations;
- * Open pit mining and related processing operations;
- * Large agribusiness and agricultural projects;
- * Large thermal and hydropower developments;
- * Domestic and hazardous waste disposal operations;
- * All projects which pose serious occupational or health risks;
- * All projects which pose serious socio-economic concerns.



Under IFC rules, all projects are subject to EIA review, and fall under three categories of review before a project is cleared.



If a proposed project falls under Category A, the site is visited either by a member of the IFC Environment Unit or by a consultant hired by the IFC. This is done to gain first-hand knowledge of the site. The IFC also requires the project to consult with local interested parties and affected groups during the EIA preparation and to make a draft of the EIA available to local interested parties.

(b) *Category B* : Projects which may result in specific environmental impacts and therefore require compliance with specified performance standards, guidelines, or design criteria to ensure mitigation of possible impacts. These projects do not usually require the preparation of a thorough EIA, but an initial environmental analysis must be prepared. Category B projects include:

- * Medium and small agribusiness and agricultural projects;
- * Electrical transmission projects
- * Oil and gas pipelines (small scale)

- * Manufacture of construction materials and cement plants
- * Fertilizer plants
- * General manufacturing
- * Textile plants
- * Tourism (including hotel projects)

(c) *Category C*: Projects which do not result in any environmental impact.

Environmental Audits

Environmental auditing first emerged in the United States in the 1970s. It entails a systematic, documented, and periodic review of either a company's operations, or a company's management practices, or both, in order to determine whether a company is meeting environmental requirements.

According to 1993 draft guidelines of the ISO "*environmental auditing has already established itself as a valuable instrument for the organization's management to check environmental performance and to help in improvement of that performance. There is a wide and active interest in the development of environmental auditing from a variety of perspectives, including industry, government, the financial community, accounting and legal professions, and environmental professionals, including engineers.*"

As a response both to direct liability issues, as well as to decreased asset values of contaminated real estate, lenders are increasingly incorporating environmental audits into standard lending practices as part of overall due diligence.

The objective of an environmental audit is to determine whether an organization is in compliance with all regulatory, health and safety regulations, as well as in compliance with internal environmental performance standards. In fact, the primary objective of environmental audits is to determine verification

of existing and likely regulations. Audits are intended to assure management: that operations are consistent with good practice; that appropriate environmental monitoring, mitigation, and other systems are in place, are functioning as intended, and are documented; that systems comply with all legal requirements.

In addition, audits have proven to be a useful tool for improving environmental performance and safety standards and for identifying problem areas.

Types of Environmental Audits:

Environmental Management System Audits: An evaluation of the effectiveness of environmental management systems and environmental performance systems in complying with stated objectives, and an evaluation as to whether the systems themselves are designed and implemented so as to meet system's goals.

Compliance Audits: (i) Regulatory Compliance Audits: an audit of current operations and controls to determine applicable regulatory requirements, resulting in a statement of the compliance status of the company; and (ii) Performance Audits to determine whether the actual environmental performance conforms with stated objectives.

Site-Property Audit: An audit to determine the environmental risk associated with financing, purchase, and sale. Also for insurance purposes. This is also called a take-over liability audit.

Audit of an Environmental Statement to determine whether the contents of an environmental statement are a correct and comprehensive statement of the assessment findings.

As noted above, the most important type of environmental audit is the site-property audit. This provides an assessment of the status of land, buildings, the specific features of individual sites, etc.

Real estate audits also include an inventory of the property; classification of property use (industrial,

office, residential, etc); location; age of property; history of ownership and past uses of the property; adjacent property uses; environmental characteristics of the site.

Property Audits: A property audit is generally comprised of two stages: (1) *Preliminary Survey:* Intended to establish what existing site information is available; to obtain new information from on-site interviews; to visit the site to inspect the property, etc. The preliminary audit is usually undertaken by a credit officer (2) *Follow-up:* If concern has been raised during the initial survey, follow-up activities include different stages of on-site analysis: soil, groundwater, adjacent site, and other testing; and an analysis of mitigation options and potential costs, etc. Secondary considerations, being site-specific, usually require specialist treatment.

Real Estate Audits: The scope of an environmental audit generally reflects the size of the loan, as well as the possible extent of environmental problems. If questions remain after the preliminary stage is completed, many lenders follow a line of inquiry similar to that summarized below.

One, Does the borrower currently own or operate, or has the borrower in the past owned or operated a hazardous waste disposal site? If yes, how and where were the wastes disposed of? Has the company complied with past environmental regulations, and is the company currently in compliance with all waste management and waste emission regulations?

Government records provide an important source of information for determining whether a company has been involved in regulatory violations. However, past compliance is not usually enough, and lenders need to assess numerous issues such as the type of land involved: what is the hydrology of the land? Is the land (bedrock) suitable to store hazardous wastes? Are there groundwaters under the site? Will the site affect adjacent residential or agricultural lands?

Is the facility likely to generate hazardous wastes? Are there chemical or hazardous waste materials on

site, transported to or from or via the site, which might become involved in a spill or accident?

Two, review the ownership history of the land, including current and past uses; machinery and equipment on site; old buildings; asbestos, toxic chemicals or other substances on site.

Lenders should also consider the type of permit(s) that past owners held in relation to the land and facility, as well as the insurance history of the site.

An important question for lenders is whether toxic wastes could occur as a by-product of the borrower's past, current or future activities.

Three, Is there a possibility of unauthorized dumping on the site or nearby the site? Consideration should also be given to nearby sites to determine whether hazardous wastes generated nearby might affect the site.

Industrial Property Audit: *One,* review all environmental studies, including compliance audits, insurance assessments, and studies of sub-surface groundwater, well-water, and other characteristics.

Obtain the names of all known owners and lessees. Obtain information about the primary products manufactured at the property, as well as the raw materials used and the types of industrial processes and abatement equipment used.

Two, determine the type and quantity of hazardous wastes generated, as well as industrial chemicals used (PCBs, radon, etc.) Identify waste disposal methods used, as well as the method(s) of transportation. Determine whether hazardous wastes are stored, or have been stored, on-site for more than 90 days.

Three, identify the property's primary sources of air and water emissions. Determine the state of on-site storage and septic tanks, as well as all underground and above-ground storage tanks. Determine the state of waste spill prevention control equipment as well as environmental emergency response plans and equipment.

Although the same degree of inspection is not usually required for non-industrial sites, similar audits and inquiries should be made for farms, gas stations, dry cleaning businesses, residential areas, and other real-estate properties. If the credit manager has doubts about possible above or below land contamination, then a more thorough environmental assessment and environmental audit should be made of the site.

General Criteria: In addition to these specific issues, some general steps in an environmental audit include:

(i) *Definition:* The extent to which an audit succeeds depends on whether the objectives have been clarified at the outset; whether the objectives are consistent with management expectations and stated objectives; whether the audit is given enough financing; and whether the importance of the audit is communicated throughout the company.

(ii) *Confidentiality:* It is easier to get employee cooperation if it is made clear that the input to the audit remains confidential.

(iii) *Scope:* Clear criteria should be established regarding the scope of the audit. For example, what is the geographic scope of the audit (ie. domestic, offshore, out-of-state operations)?; does it involve a review of all past regulatory compliance records?

(iv) *Coverage:* For companies with several operations located at different sites, there is a need to determine the coverage of the audit.

(v) *Auditing Approach:* The approach of the audit, as reflected in the audit design, should conform to the objectives of the company in order to gauge whether internal management systems are meeting regulatory compliance, and whether systems are improving environmental performance.

ISO Draft Guidelines

Under the ISO Technical Committee 207, work is underway to develop international guidelines for environmental auditing. The development of

international standards for audit approaches will be an important development for lenders, in terms of international standards directly related to due diligence. The ISO draft guidelines note that although environmental audits and environmental impact assessment are terms which are used interchangeably, a distinction can be made in terms of the degree of accuracy between the two. The ISO argues that the level of assurance from an audit is higher than that from an assessment.

As previously noted, the development of ISO standards for environmental audits – especially site-property audits – will be of direct importance to lenders. International standards will, for instance, be useful in offshore lending, where national standards are either unclear or below domestic standards.

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Under 1993 draft ISO audit guidelines, property audits are of direct concern to lenders.

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In the development of international standards, it is important, however, to note that the ISO is not likely to develop a single, universal auditing standard. Instead, standards will probably work towards some pre-determined systems or minimum criteria. In this regard, the 1993 draft guidelines note that:

“an environmental audit should be performed systematically using a predetermined approach, which should not necessarily be uniform, but comparable for similar environmental audits conducted in other situations, to give assurance that the process of obtaining evidence which has been conducted meets minimum standards which are consistent between similar audits. Therefore detailed procedures are required for every type of environmental audit. These detailed procedures only differ where this is essential for a good performance of the specific characteristics of the audit.”

(For more information, see UNEP Industry and Environmental Office Technical Series, Number 2, Environmental Audits, Number 7, Audit and Reduction Manual for Industrial Emissions and

Wastes, Number 11, From Regulations to Compliance, and Number 12, Hazard Identification and Evaluation in a Local Community.)

CORPORATE ENVIRONMENTAL REPORTING

The accuracy of site audits and project assessments to a large degree reflects the accuracy of information that a borrower provides about environmental compliance performance. Consensus exists that lenders cannot be, and should be expected, to monitor closely or to police the environmental performance of borrowers.

In recent years, a great deal of attention is being focused not only on finding ways of improving environmental performance, but also on improving the way in which environmental performance indicators are chosen, and reported to regulators, lenders, line managers and the public. Various organizations, including UNEP, OECD, the International Institute for Sustainable Development, Business Council for Sustainable Development, and others, have increased work on corporate environmental reporting.

Although consensus is far off on what kind of information might be included, suggestions have included: environmental impacts of a product; what and how much pollution the planet/company generates; what the company has done to minimize environmental damages; what still needs to be done to improve environmental performance.

As noted, many large companies have in place a code of conduct or company plan for the environment. Such statements are useful from an environmental perspective because they help to focus company operations on environmental goals. And they help lenders by providing an industry-wide gauge of best-practices.

Surveys of industry practices between 1988 and 1992, for example, showed that nearly all large companies surveyed had in place a formal, written environmental policy statement. The statement often committed the company to exceed minimum

regulations: in one 1988 survey of 75 firms across a broad industrial spectrum, 60 percent of companies stated that they intended to go beyond compliance by committing to more stringent requirements in areas where regulations were considered weak or lacking. Moreover, environmental statements are becoming more specific, focussing on emissions reductions, effluents, and wastes.



Of 222 transnational corporations surveyed in 1992, only seven disclosed in annual or other reports the extent of their environmental liabilities.



The gap between promise and performance, however, remains wide. Few countries have reporting standards specifically covering disclosure of environmental management policies. In 1993, only Norway had in place a requirement that Board of Directors disclose their company's environmental impact in their annual report.

Thus far, the quality of corporate environmental disclosure has been very poor: in Canada, for example, only one percent of all corporate annual reports submitted between 1983 and 1988 contained information on the environment. By the end of the decade, that figure in Europe and North America had jumped to around 60 percent.

However, the kind of information disclosed concentrated on disclosure of environmental policies (70 percent); key environmental improvements (62 percent); and financial impacts on the environment (64 percent). By contrast, only 7 percent discussed remediation of environmental damages (United Nations 1992). And less than 14 percent of environmental performance information was audited.

In the same UN survey, of the 222 transnational corporations surveyed, only **seven** disclosed the magnitude of their environmental liabilities. The survey concluded that this extremely high lack of disclosure sprang from several sources including uncertainty (environmental liabilities are often seen

as a function of changing regulatory requirements).

As regulations become stricter, liabilities become higher. In addition, liabilities are long-term; clean-up time for a hazardous waste site in New Jersey was recently measured at 29 years, with average per year mitigation costs exceeding \$2 million per year. Unclear and longer time horizons often fall far beyond the corporate planning horizons of most companies.

(For more information, see UNEP Industry and ENvironment Office Corporate Environmental Reporting programme; UN Environmental Accounting: Current Issues, Abstract and Bibliography (1992); UN Benchmark Corporate Survey (1991); UNEP Technical Series Number 6, Companies' Organization and Public Communication on Environmental Issues (1992).

**CONCLUSION:
SELECTED ENVIRONMENTAL ISSUES**

NEW PARTNERSHIPS

Every year, detailed analytic reports and prescriptive options are published, outlining a growing list of environmental problems. Useful overview reports include the annual World Resources report; the Environmental Data Report of UNEP; the annual State of the World report of Worldwatch, as well as national environmental reports, NGO environmental reports, and specialized sectoral and regional reports.

In tracking environmental issues, a major challenge for lenders is making sense of environmental issues, their protection against possible risk, and their participation in strategy responses. As noted, lenders continue to place considerable emphasis on monitoring specific environmental issues – namely waste treatment, land-fill sites, and hazardous waste management.

Even in these areas in which expertise is developing, it is difficult for lenders to sort through detailed scientific, risk analysis, and engineering information. This is true, both at the general level as well as in determining company-specific responses to environmental problems.

The credibility and relevance of information related to environmental performance is therefore vital. Several options have been discussed in recent years, including the establishment, under the UNEP Advisory Group, of an information clearing house for the exchange of information intended to quantify environmental risk for lenders.

More recently, the *Business Council for Sustainable Development* has increased its work on environmental capital market issues. In addition to assessing work being undertaken by credit rating agencies and the insurance sector in environmental risk, BCSD is also looking at what type of information creditors need, from environmental agencies as well as in company reporting, in helping them determine and quantify environmental risk.

Considerable work remains to be done in this area. Recent surveys of the financial services sector – including an extensive survey of environmental management practices in Eastern and Central Europe by the European Bank for Reconstruction and Development, and a recent UNEP-Salomon Inc. survey – are helping to determine what kind of information the financial services needs in making better choices about environmental management.



“A great change in our stewardship of the earth and the life on it is required, if vast human misery is to be avoided and our global home on this planet is not to be irretrievably mutilated.”

Statement by 1670 scientists, including 104 Nobel laureates.



The purpose of this final section is to list briefly some of the key issues facing the environmental agenda. Some, such as waste management and chemical safety, are already affecting liability. Others, such as the longer-term insurance and other impacts of climate change, are only now being weighed by lenders.

In the context of the debate about environmental goals and banking operations, it is important to note the following: Thus far, lender liability has diverted or focused too narrowly, the relationship between lenders and environmental policy. Lenders need to become more engaged in finding proactive solutions to environmental problems because:

- (i) problems facing the planet are severe and are moving towards a global crisis;
- (ii) no single party – be it science, industry, economists, lawyers, governments, NGOs or international organizations alone has the solutions; and
- (iii) as pivotal economic actors, lenders have an important role to play in finding innovative financing responses and in structuring public-private sector solutions to environmental problems.

Agencies such as UNEP do not advocate closer involvement by banks in environmental issues merely for its own sake. As is evident from activities underway in economics, accounting, law, regulations, and industry innovations, to name but a few, the green agenda is hardly suffering from a lack of participants or a poverty of possible solutions.



An estimated 1.3 billion people lack access to clean drinking water.



The severity of environmental problems demand, however, that new solutions be explored. Clearly, these solutions must incorporate the expertise and imagination of the financial services community. Lenders must be acknowledged as partners in future action, rather than as defenders against unfair legal and other decisions involving liability.

SOME ISSUES: AN OVERVIEW

In April, 1993, 1670 scientists – including 104 Nobel Laureates – issued a warning to humanity. Under the banner of the *Union of Concerned Scientists*, they warned that the world’s environment was quickly approaching a critical condition, with irreversible damage a growing threat. The scientists warned that if fundamental changes were not rapidly effected, humanity would not be able to avoid an environmental disaster propelled by unsustainable development.

The scientists cautioned that: *“No more than one or a few decades remain before the chance to avert the threats we now confront will be lost and the prospects for humanity immeasurably diminished.”*

Also in 1993, a group of physicians published Critical Condition: Human Health and the Environment, (MIT 1993). They warned that the cumulative effects of air and water pollution; food contamination from pollution; radiation exposure; depletion of the stratospheric ozone; population growth; climate change; and species extinction were directly affecting the health prospects of the entire human population.

Pointing to dramatic jumps in cancer, skin disorders, sterility and other acute human health problems, they warned that changes must be made in response to *“the environmental crisis – namely that their health and lives, and those of their children, are at stake.”*

Below, in point form, is a list of some key environmental issues about which scientists and physicians, as well as environmentalists, policy makers, industry, and the public have expressed alarm. The listing does not duplicate account of some global issues, such as ozone layer depletion, outlined in section three above.

Population: Since 1900, the world’s population has multiplied more than three times. The current population of 5.7 billion is expected to double by the year 2050. Each year, 100 million more people share the planet’s finite resources. The vast majority of population growth – approximately 90 percent – is in developing countries. Today, an estimated 1.3 billion people lack access to safe drinking water.

Indications of unprecedented increases in human numbers and demands on the Earth’s finite resources are numerous. One example: the consumption of natural resources has jumped dramatically. (For example, fossil fuel consumption has risen 50 times in the same period, and industrial productivity by a factor of 50.

Numerous indicators, from changes in the earth’s climate, to the build-up of chemicals in the atmosphere, in foods, and in drinking water, indicate that we are quickly approaching, and in some cases may already have breached, critical ecological thresholds.

Food Production: Per capita food production in Africa declined by 5 percent on average in the last decade, and there are signs of accelerating soil erosion and land degradation in parts of North America as a result of pesticide over-use and over-capacity.

Over the last 45 years, about 11 percent of the Earth’s entire stock of vegetated soils have been degraded to the point where the original biotic function has been damaged, and where reclamation is difficult and costly, or in some cases, impossible. Each year, an

estimated 25 billion tonnes of productive topsoil are lost through land degradation, wind, and other erosion. An estimated six to seven million hectares of agricultural land is lost each year to erosion.

Today, an estimated one billion people are directly affected by land erosion and desertification.

Estimates suggest that as much as 50 percent of India's land is degraded; 34 percent of Thailand's land; 30 percent in China; and 24 percent in Indonesia. Increasing rates of land degradation undermine agricultural productivity.

Air Pollution: Each year, billion of tonnes of sulphur dioxide and other pollutants are pumped into the atmosphere. Today, 900 million people – most in developing country cities – breathe air below minimum health standards.

The most serious air pollutants are: sulfur dioxide, nitrous oxide, ozone derived from photochemical smog, carbon monoxide, lead, and particulates (soot and smoke). The most serious sources of air pollution include: domestic heating, electricity generation, automobile emissions, and manufacturing processes.

Deforestation: Since 1850, the Earth's forest cover has been reduced from six billion to four billion hectares. Rates of deforestation have risen sharply in the last four decades, especially in developing countries. Forest cover in Ethiopia for example has dropped from 30 percent forty years ago to less than three percent today.

The loss of tropical forests is estimated at 20 million hectares per year. More than 35 percent of Europe's remaining forests are now damaged, dead or dying as a result of acid rain and other pollution. Estimated losses in timber production because of air pollution \$23 million.



Each year, an estimated 25 billion tonnes of productive topsoils are lost to erosion.



The ratio of reforestation rates to deforestation rates (% over %) remain low in Africa, Asia and Latin America, at 0.1/4.1, 2.1/3.9, and 0.4/7.4 respectively. As a whole, the net area planted per annum appeared to represent only 12% of that felled every year.

Biodiversity: Each day, an estimated 50 to 100 species become extinct because of deforestation, urban expansion, pollution, and habitat loss.

Marine Pollution: Between 1979 and 1991, total marine fish catch in 17 marine areas increased by 25 percent. Evidence suggests that in six major marine areas, fishery yields are on the decline. Along the eastern seaboard of North America, cod stocks appear to have collapsed.

Land-based sources of marine pollution, (from sewage emissions, nutrient run-off, garbage, industrial effluent, sludge, and other pollutants) are believed to increase natural amounts of dissolved nitrogen and phosphorus entering coastal areas by between 50 and 200 percent.

Some 15 million tonnes of nitrogen and one million tonnes of phosphorus are fed naturally from rivers into the oceans. In comparison, waste emissions are estimated at between 7 and 35 million, and 0.6 and 3.75 million tonnes respectively.

Freshwater: In recent decades, freshwater use has been expanding at a rate of 4 to 8 percent per annum. Despite population growth rates in developing countries, most of this expansion in freshwater use has taken place in developed countries. Industry in OECD economics produces an estimated 90 percent of total discharges of toxic substances. Five industries – chemicals, paper, petroleum, textile and primary metals – account for over 90 percent of toxic discharge in freshwater in the US, discharging an estimated 4,355 billion kg's into water supplies.



The Government of Poland estimates that it will cost \$260 billion over 20 years to clean up the environmental mess.



Chemicals: Some 100,000 chemicals are believed to be in regular use, although approximately 3,000 account for 90 percent of total chemical uses. Adequate toxicological data has been produced for only a small fraction of existing chemicals. Three new chemicals are introduced each day. Since 1940, the number of synthetic materials in human society has risen by more than 350 percent.

World fertilizers use rose from 14 million tonnes in 1950 to 143 million tonnes in 1989. Eutrophication is estimated to affect roughly 40 percent of the world's lakes and reservoirs.

Climate Change: In the last 40 years, annual emissions of carbon dioxide – the main “greenhouse gas” – have jumped by 27 percent. Atmospheric concentrations of carbon dioxide have increased by 27 percent in the past century. Concentrations of methane have risen by 150 percent.

Energy: Energy requirements necessary to meet the development needs of a rapidly growing population lie at the heart of the environmental agenda. The World Energy Council estimates that energy demand will rise by between 50 and 75 percent between 1985 and 2020.

The last two decades have seen enormous increases in the consumption of commercial energy. Estimates range from an increase of 50 to 60 percent. The vast majority of this increase – roughly 90 percent – is derived from the demand for fossil fuels.

Industrialized countries consume three times as much commercial energy as developing countries, and 10 times as much on a per capita basis. In the last twenty years, coal demand for commercial energy use has tripled in developing countries.

Coal, the dirtiest of fossil fuel sources, accounts for 45 percent of developing country energy supply. In transitional economies of eastern Europe, coal is the major source of domestic heating; in Poland it provides 47 percent of domestic fuel; and in Hungary, 75 percent.

Eastern and Central Europe: In light of the enormous waste contamination, severe pollution, and other problems facing the region, the situation facing countries in the region has been termed an ecological catastrophe.

Human health indicators for heart, respiratory, and other problems as well as for birth defects, show, for example, a link between pollution and the alarming deterioration in health standards of recent years. The legacy of Chernobyl; the contamination of million of hectares of land by industrial wastes; the continuation of massive air and other pollution; are just some of the acute problems faced in the region.

In response, governments and international organizations are concentrating on clean-up actions. The Ukraine alone estimates that it is allocating 20 percent of GDP on clean-up projects. The Government of Poland estimates that it will cost \$260 billion over the next 20 years in environmental clean-up actions.

Although the post-communist investment predictions focused on the likely input of huge capital investment in the CIS countries – including investment in TNCs with off-the-shelf environmental technologies, large scale western investment remains tentative. This is due to the recession at home, uncertainty, and other problems.

Swaps: However, innovative solutions involving the private sector, together with public institutions like the EBRD, World Bank, EC PHARE programme, the IFC, and bilateral development finance, are emerging. These examine new possibilities for financing the enormous clean-up required.

One option, which first emerged from the private sector in the late 1980s to help finance conservation projects in Central America, is the expansion of debt-for-nature swaps to help finance pollution remediation projects.

In Poland, for example, several innovative debt-for-environmental swaps have already taken place. As of January 1994, for example, the following swap agreements had been made:

* United States (1991) – 10 percent of total debt – swap value: \$360 million;

* Switzerland (1993) – 10 percent of total debt – swap value: \$52 million;

* France (1993) – one percent of debt – swap value: \$48 million;

* Finland (1990) – 10 percent of debt; swap value: \$17 million.

Problems facing other regions, including Asia Pacific, Latin America and Africa, demand equally new and innovative solutions involving the private as well as the public sector.

APPENDIX A:

Banking and the Environment

A Statement by Banks on the Environment and Sustainable Development

Foreword: We, the undersigned, believe that human welfare, environmental protection and sustainable development depend on the commitment of governments, businesses and individuals. We recognize that the pursuit of economic growth and a healthy environment are inextricably linked. We further recognize that ecological protection and sustainable development are collective responsibilities and must rank among the highest priorities of all business activities, including banking. We will endeavour to ensure that our policies and business actions promote sustainable development: meeting the needs of the present without compromising those of the future.

(1) General Principles of Sustainable Development:

(1.1) We believe that all countries should work towards common environmental goals.

(1.2) We regard sustainable development as a fundamental aspect of sound business management.

(1.3) We believe that progress towards sustainable development can best be achieved by working within the framework of market mechanisms to promote environmental protection. We believe that there is role for governments to provide the right signals to individuals and business, to promote behavioral changes in favour of effective environmental management through the conservation of energy and natural resources, whilst promoting economic growth.

(1.4) We regard a versatile, dynamic financial services sector as an important contributor towards sustainable development.

(1.5) We recognize that sustainable development is a corporate commitment and an integral part of our pursuit of good corporate citizenship. We are moving

towards the integration of environmental considerations into banking operations and business decisions in a manner which enhances sustainable development.

(2) Environmental Management and Banks:

(2.1) We subscribe to the precautionary approach to environmental management, which strives to anticipate and prevent potential environment degradation.

(2.2) We expect, as part of our normal business practices, that our customers comply with all applicable local, national and international environmental regulations. Beyond compliance, we regard sound environmental practices as one of the key factors demonstrating effective corporate management.

(2.3) We recognize that environmental risks should be part of the normal checklist of risk assessment and management. As part of our credit risk assessment, we recommend when appropriate environmental impact assessments.

(2.4) We will, in our domestic and international operations, endeavour to apply the same standards of environmental risk assessment.

(2.5) We look to public institutions to conduct appropriate, up-to-date and comprehensive environmental assessments in ventures with them, and to share the results of these assessments with participating banks.

(2.6) We intend to update our management practices, including accounting, marketing, public affairs, employee communications and training, to incorporate relevant developments in environmental management. We encourage banking research in these and related issues.

(2.7) We will seek to ensure that in our internal operations we pursue the best practices in environmental management, including energy efficiency, recycling and waste minimisation. We

will seek to form business relations with suppliers and sub-contractors who follow similarly high environmental standards.

(2.8) We support and will develop suitable banking products and services designed to promote environmental protection, where there is a sound business rationale.

(2.9) We recognize the need to conduct internal environmental reviews on a periodic basis to measure our operational activities against our environmental goals.

(3) Public Awareness and Communication

(3.1) We will share information with customers, as appropriate, so that they may strengthen their own capacity to reduce environmental risk, and promote sustainable development.

(3.2) We will foster openness and dialogue relating to environmental management with all relevant audiences, including governments, clients, employees, shareholders and the public.

(3.3) We recommend that banks develop and publish a statement of their environmental policy and periodically report on its implementation.

(3.4) We ask the United Nations Environment Programme to assist the industry by providing, within its capacity, relevant information relating to sustainable development.

(3.5) We will periodically review the success in implementing this Statement and will revise it as appropriate.

(3.6) We encourage other banks to support this Statement.

The United States Superfund Process

In 1984, the United States federal government initiated a program to deal with the numerous hazardous waste sites around the nation. The Comprehensive Environmental Responsibility and Cleanup Liability Act, or CERCLA, was enacted to provide a mechanism for federal money to be used for hazardous clean-ups to progress even while the government sought to recoup the funds expended from the responsible party(ies). This process is referred to as Superfund.

The Superfund process allocates federal money each year for clean-up projects. Superfund sites were originally selected and ranked according to degree of hazard on the National Priorities List (NPL). Subsequently, sites have been added and the list has been re-ranked, however, in the interim, individual sites progress through the clean-up process.

A site is generally listed when there is some sort of local complaint or a discharge occurs. Usually local health departments respond, and then depending upon the severity, the U.S. Environmental Protection Agency (USEPA) is called to make further evaluations. Depending upon the outcome of these evaluations, a site may become a "listed" site, and be placed on the NPL to await further action. This listing requires advertisement in the Federal Register as part of the procedure. Generally, the lower the site's rank, the more readily its problems are addressed. Sometimes political pressure can come into play in order to get a more highly ranked site cleaned up before a lower ranking site.

Once the USEPA decides to act upon a site, it begins with a Preliminary Remedial Investigation. In this stage, the contaminants are identified, as well as the degree of contamination. From that stage, a Remedial Investigation/Feasibility Study (RI/FS) is performed. This entails a more detailed assessment of the site and identifies various methods of remediation with a recommendation of which alternative is the most cost effective.

Based upon the RI/FS the federal government, in

conjunction with the appropriate state government, prepares a Record of Decision (ROD), which identifies the selected alternative and outlines responsibilities and rough time frames for the clean-up. The degree of involvement of the state government is contingent upon the type of remediation to take place. Some smaller sites stay entirely within the purview of the federal government and do not require any long term operations and maintenance (O&M), while others need extensive O&M in the range of 30 years. Federal law requires the state to undertake the long-term O&M portion of the clean-up in order for the federal government to take on the construction costs. The state's signature on the ROD ensures that it will be responsible for any post construction O&M.

In order to facilitate the remediation, the federal government will hire a consultant to prepare the remediation specifications, and then bid the project to a construction contractor, which undertakes the work. Depending upon the size of the project, construction can take anywhere from one to five years, and costs can range from several hundred thousand dollars to upwards of \$100,000,000. Once the construction has been completed, the federal government turns the site over to the state for long-term O&M.

An example of a large scale remediation undertaken by the federal government is the Helen Kramer Landfill in New Jersey. This site operated as a landfill from 1965-1981 and was situated in a rural farm area of southern New Jersey. Waste was accepted from a variety of generators, but included drummed chemicals. In 1981, the landfill operations were ordered to cease by the state, and the federal government put the site on the Superfund list. An RI/FS was completed on the site in 1988 and a ROD was signed between the federal government and the state shortly thereafter. Construction of the remedial action (RA) began in 1989.

The RA consisted of leaving the waste in place and covering it with an impermeable cap; installation of a leachate collection and treatment system; as well as a gas flare to incinerate the landfill gases. The total

cost for the construction phase of this project is approximately \$115,000,000. The plant has just entered the O&M phase under the state's purview and will likely remain in O&M for another 29 years. The annual O&M cost budgeted by the state is \$2,200,000.

As mentioned, some O&M can run for 30 years. This is due to the fact that many sites are old landfills and regulations require that after proper closure they be monitored for 30 years. Monitoring and actual O&M activity are not always synonymous. In fact, if the targeted clean-up levels are not reached in 30 years, O&M may have to continue beyond the 30 year mark. These situations are purely hypothetical at this point, as no site has reached the 30 year mark to date.

This previous description of Superfund is only one aspect of the legislation. The other aspect which potentially involves creditors, is the cost recovery from the potential responsible parties (PRPs). The optimum situation is where the PRP performs the entire remediation and there are no remediation costs attributable to the government. Clean-up levels are usually set up through a consent decree or a memorandum of agreement between the government and the PRP. That way the government can monitor the progress of the PRP and make sure the work is being performed. Should the PRP default on this agreement, the government can then step in and complete the job.

In the event that no PRPs step forward, or the available PRPs do not have the appropriate funding to perform the remediation, the government is likely to institute lawsuits in order to recover any funds expended for the clean-up. In the case of landfills, there are usually a variety of PRPs available to the government to bring action against; such as generators, haulers, owners and operators. Under Superfund, each party is jointly and severally liable for any waste which is contributed to the site. Much time and money is spent by both the government's attorneys and the PRP's attorneys arguing over liability. When there are multiple PRPs, much time is spent trying to determine each one's appropriate share of the clean-up.

Many cases are resolved through negotiations, whereby concessions are made by both sides and the result may be that the PRPs either pay for or perform the remediation themselves. The government may concede a portion of the costs expended in order to get the PRPs to complete the task.

In 1996, Superfund is due for re-authorization by Congress. There has been considerable discussion regarding what form Superfund may take concerning liability and the processes by which liability will be determined. For example, an option is a theory that the responsibility of determining the universe of PRPs will rest solely with the government. Currently, the government need only identify one PRP for joint and several liability and that PRP would need to conduct the appropriate research to locate other PRPs. By requiring the government to perform this background research, the universe of PRPs is already determined and the parties can then focus on allocation of cost. Another area being considered is allowing for de-micromus exemptions and early de-minimus settlements according to percentage of cost.



APPENDIX TWO

Environmental Risk: Credit Approaches and Opportunities

Prepared for UNEP Round-Table on Commercial
Banks and the Environment

26-27 September 1994 – Geneva

Prepared for the Environment and Trade Unit, UNEP, by David R. Smith

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EXECUTIVE SUMMARY

INTRODUCTION

By applying even the most conservative estimates for population growth and resource depletion, the balance of probabilities indicates that the capital markets will, in future, encounter greater rather than lesser degrees of environmental risk, expressed in terms of legal and regulatory sanctions, altered patterns of consumption and distribution, and changes in market prices. Furthermore, because the severity of environmental risk may be expected to increase over time, the brief history of financial loss associated with that risk in the banking sector is likely to be an unreliable source of data. The difficulty of environmental credit analysis is compounded by the imprecise correlation between environmental qualities and market prices.

Given these factors, the question underlying this report is how do financial professionals advance from the status quo? The work is therefore necessarily discursive and somewhat hypothetical. It aims not for prescriptive answers but for an examination of the characteristics of environmental risk and the methodologies used by financial services companies to measure and price it. As an interim report, it provides only a rough sketch of an interdisciplinary terrain, which is largely unexplored.

Environmental risks, which are most relevant to the capital markets, arise from interactions between the economy and the natural environment, and impose risk and uncertainty on asset values and credit ratings. Gillroy (1992) describes environmental risk as a hazard that exhibits scientific uncertainty, irreversibility, latency of effect, and low probability of a catastrophic outcome. It is not endemic to the capital markets but to the world at large.

Problems associated with the destruction of ecosystems typically have indistinct and shifting boundaries. Predictability is therefore intrinsically difficult and, in many cases, impossible. Thus, precautionary principles may become more pervasive. Banks must cope with similar difficulties of

probability and prediction when trying to calculate not only environmental risk but risk in general. Recent work in the fields of non-linear dynamics and complex systems is yielding interesting and practical lessons for scientists as well as capital market traders and investors. Non-linear dynamics is a branch of mathematics that is already applied to foreign exchange trading, for example, but applications for environmental risk management remain experimental.

In the short-term, it is reasonable to assume that commercial banks will successfully shield themselves from overt institutional and legal demands that they protect the environment as a condition of retaining their licenses to conduct business, yet this kind of pressure is already being exerted on some of their customers. Some natural resource dependent companies and chemical companies, for example, are facing unprecedented environmental obligations and liabilities. Banks are therefore adjusting their credit policies and procedures accordingly,

Commercial banks have a significant role to play in a scenario characterized by environmental risk. First, they are inextricably linked by lending and investment practices to commercial activity that degrades the natural environment. Second, they harbour skills, technologies, and economic resources, which can contribute to environmental protection and remediation. Third, they have an interest in sustaining the biosphere's capability to regenerate life without which economic activity would be impossible.

Yet, if banks are to support initiatives for sound environmental stewardship, those initiatives must, in the first instance, align with banks's main concerns, which are profit maximization and the enhancement of shareholder value. Beyond the point where business interests complement efforts to prevent, minimize, or mitigate environmental damage, banks may be unwilling or unable to act. Ethical or conscience-led lending policies are still a fuzzy area for the majority of bankers. Nevertheless, opportunities exist for financial services companies

to choose, in the interest of shareholders, low-risk environment-related credit strategies. Alternatively, if they choose high-risk environmental strategies, loans should be priced to reflect that risk.

A critical path of environmental risk management in banking might begin at the operational level with formal or informal screening of high risk enterprises. A second stage might include implementing due diligence policies and procedures, which further define the potential environmental obligations and liabilities of specific enterprises. At a third stage, information systems and risk pricing mechanisms might be sought and developed. None of these steps are likely to be of much use, however, without senior risk managers taking a view of the future that includes a facility for identifying and measuring the implications of short-run and long-run economy-environment interactions. Only then can environmental risk be integrated within the broader risk management strategies and systems of the bank,

The plain message for bankers who wish to strengthen their credit risk management capabilities is to identify, measure, and price environmental risk more accurately. This will require a wider, deeper pool of information and innovative approaches to risk assessment, credit evaluation and systems design, backed-up by training. For the more enterprising lenders and investors, environmental risk is also creating opportunities. These include risk management applications, specialized intermediation services, funding for new environmental industries, financial assurance, and the scope to develop environment-related products and services.

FINDINGS

Banks that have recognized a new lending and investment climate, in which environmental liabilities need to be counted, have begun to incorporate environmental risk analysis into existing risk management practices. Small-scale attempts to redefine banking in light of ecological imperatives have taken place at institutions such as Geo Bank in Switzerland, and the Ecology Building Society in England. On a much larger capital scale are the

environmental strategies employed at development banks such as the World Bank and the European Bank for Reconstruction and Development (EBRD), and at commercial banks such as National Westminster Bank, Deutsche Bank and Bank of America.

As commercial banks discover they are financially accountable for economic activity that degrades the environment – from the imposition of legal and regulatory sanctions, and from market responses that reflect the cost of externalities – environmental management policies and procedures are put in place. Credit approaches are usually driven more by the need for legal compliance than for forward-looking strategic planning; ethics is a minor, if not inconsequential, factor.

The overwhelming concern, especially in the United States, is to avoid liability for remedying environmental damage. Risk of potential liability arises, for example, when accepting polluted real estate collateral. Well-known cases in the United States, such as Fleet Factors Corp. (1990) and Maryland National Bank and Trust Co. (1986), have highlighted this risk. In Europe, existing laws within certain jurisdictions as well as prospective European Community laws are causing similar apprehension,

Some banks now assign a risk weighting to corporate credit where the principal commercial activity has the potential to cause harm to the environment. Steel production and pulp and paper industries, for example, are witnessing increases in operating and compliance costs. Consequently, lenders and investors are beginning to charge a premium for capital. Both transaction costs and the cost of capital have escalated. Often they are not explicit charges to the customer but weighed into the overall credit assessment and recommended interest rates.

TRENDS

Environmental risk management is a relatively new phenomenon in the capital markets. Techniques are subject to rapid uptake and experimentation, and driven primarily by defensive actions against

potential exposures, particularly down-side risks to loan portfolios and asset bases. Fear, not greed, is the primary motivating force.

Improved knowledge of environmental risk in banking is frequently accompanied by greater appreciation for the level of risk that might be incurred by certain enterprises and for the ways in which that risk intersects with credit risk. The learning curve can typically be traced by the severity of losses on corporate loans and by the loss of value on loan collateral. Thus, one trend is to disqualify automatically specific industrial sectors from obtaining credit. This is creating a diminishing pool of capital for some borrowers. Another, quite different trend is to take an in-depth look at the borrower's business and operations so that the risk is assessed and priced more accurately. In both cases, formal or informal rating systems are increasingly used to identify high-risk industries.

Credit approaches have, so far, focussed on the environmental risks and remedies arising from laws and regulations. Consequently, due diligence has become more intensive and expensive. Operational risks and strategic risks, which are harder to perceive and quantify, have been less important. These approaches are changing, however, to reveal a trend in which bankers are beginning to look beyond legal and regulatory issues, and beyond the sometimes limiting analyses of soil samples and related environmental assessments. Greater attention is now directed towards management quality and environmental management systems. Thus, environmental risk is becoming part of the total business risk. The developing trend is to link environmental risk with operational risk, compliance risk, materials risk, occupational health and safety risk and so on, depending on the nature of the business.

Underpinning the efforts of bankers to assess and price environmental risk, regulatory authorities such as the Federal Deposit Insurance Corporation (FDIC) are issuing guidelines on good practice. The United States' Securities and Exchange Commission (SEC) and the Ontario Securities Commission (OSC) in

Canada, are requiring disclosure of information on environmental liabilities. Also, several accounting bodies are investigating ways of putting pollution charges and clean-up costs on balance sheets, and considering how current requirements for estimating contingent liabilities might be applied to environmental obligations. These and other initiatives will create increased levels of transparency and make it easier for banks and other financial services companies to make valuations.

Besides the mainstream approaches to environmental risk management, there is scope for dedicated green lending operations, debt-for-nature swaps, and green merchant banking. By employing environmental considerations banks have also gained market share, identified growth sectors, adjusted and revalued loan portfolios.

INTRODUCTION

Environmental Risk: Credit Approaches and Opportunities

1. AIM OF THE REPORT

This report for the United Nations Environment Programme (UNEP) examines how and why environmental risk arises to affect credit policies and procedures in the capital markets. Environmental risk management is a new area of concern and practice. The report therefore applies empirical and theoretical knowledge to the subject so that an integrated, forward-looking view of the relationship between environmental risk and banking strategy may be gained. The audience for this report is bankers, some of whom are sophisticated in matters of environmental risk management. However, the report is primarily intended for the uninitiated, who may not have extensive knowledge or experience.

The report argues implicitly that environmental risk management in banking is fundamentally about information management and that this function is perpetually adapting to changing circumstances and information inputs. The central message for bankers who wish to strengthen their environmental risk management capabilities is to understand, measure, and, when appropriate, price environmental risk. This will entail a wider spectrum of more detailed information, innovation in credit evaluation and systems design, and training.

2. STRUCTURE OF THE REPORT

The report is organized in three parts. Part one looks at the emergence of environmental risk analysis in banking. Part two takes an overview of environmental risk signals from legal and regulatory sanctions, and market forces. Part three describes environmental credit risk management programmes.

3. SCOPE OF THE REPORT

There are at least two major concerns involved in any examination of environmental risk in the capital markets: the risk of inflicting irreparable harm and degradation on the natural environment as a result of environmentally malign lending and investment

decisions, and the risk that such decisions might have a negative effect on the going concern value and goodwill of a financial services company. The latter of these two risks is of primary interest in this report, although it cannot be divorced from the former.

On a broader level, this report begins to investigate the adaptation of capital market functions to meet the demands of protecting ecological and human systems from destruction and degradation caused by economic activity. The problem is one of reconciling lending and investment priorities, which encourage ecological destruction, with the need to conserve the earth's natural capital for present and future generations. Difficulties in tackling the problem stem from a lack of knowledge and guidance on policy-making in this area, and from real concerns that the imposition of environmental policies will create market distortions with potentially adverse effects on economic strength, competitiveness, and efforts to fund environmental remediation and protection. More specifically, the report investigates current and prospective issues of environmental risk and uncertainty in banking: what exposures and market distortions are created, and how credit policies and procedures are affected.

4. CHALLENGES TO TRADITIONAL BANKING ASSUMPTIONS

Many financial professionals might suppose that environmental risk has very little to do with the capital markets. The purpose of lending and investing is to make a profit, pure and simple, not to engage in social or ecological philanthropy. For a financial institution to practice otherwise could be contrary to its shareholders' interests and, from the viewpoint of some economists, contrary to the interests of society. Furthermore, the notion that financial capital might somehow contribute to environmental damage is far from obvious. Banks do not spew clouds of toxic chemicals into the atmosphere or lay waste to vast tracts of rain forest, and yet these by-products of industrial and agricultural activity could not occur without finance. From its minimal energy and resource requirements, the physical operation of a bank has a relatively benign effect on the environment. Its stock in trade

is information, not a natural resource that can be depleted or polluted. This does not determine a lack of connection or accountability between banking and environmental degradation. It does mean, however, that banking is materially and, for the most part, legally removed from the environmental damage caused by the corporate activity it underwrites.

Distance from the scene of destruction, legal protection from responsibility, and business conducted in a virtual moral vacuum, isolates banking from the physical, social, and ecological world. In this way, markets retain the neutrality required for decisions to be based purely on the grounds of economic utility. However, this isolation is essentially untenable, and has already collapsed for those institutions which have begun to recognize and measure environmental risk.

PART I

The Emergence of Environmental Risk Analysis in Banking

1. BACKGROUND

Risk is a fundamental business concern for the financial services sector. It comes in many guises — from interest rate risk to credit risk, liquidity risk, systemic risk and so on. A recent addition to the lexicon is environmental risk. Although it is often relegated to a special class of legal risk, many believe that environmental problems are more tractable by free market methods than by regulation alone. It is a belief shared by industrialists and bankers alike, including those who subscribe to the United Nations Statement on Banking and the Environment (1992).

Of course, free market principles go hand-in-hand with risk management. With the ascendance of risk management as a more exacting business and profit-related activity, bankers, investors, borrowers, and insurers have witnessed innovation in derivative instruments, the creation of new financial models such as RAROC (risk adjusted return on capital), and new protective systems such as netting for swaps and

foreign exchange transactions. To what extent is this technology appropriate for dealing with environmental risk? Furthermore, what can adaptive complex systems, such as those found in the real world, tell us about the behaviour of markets and the effectiveness of state-of-the-art financial instruments? The phenomenon of environmental risk raises several interesting questions, as well as possibilities, for the future development of capital market technology.

Ten years ago, even five years ago, the environment was an irrelevant or, at best, marginal issue for the majority of credit decisions. Yet, as the scale of environmental obligations and liabilities are revealed — Texaco's planned \$7 billion investment over five years, Superfund's \$500 billion clean-up costs over 40 years, the United States petroleum refiners' \$37 billion costs under the amended Clean Air Act — it is clear that some assumptions underlying environmental remediation, economic development, information flows, and financial analysis, deserve closer attention.

By pushing up transaction costs and liability exposures, casting doubt on the reliability of asset valuations, undermining trust in real estate security, and overturning the priority of bankers' liens in some jurisdictions, environmental risk has become a key factor in determining creditworthiness, cost of capital, and the flow of funds to specific industrial sectors. Furthermore, when commercial activity is measured in terms of economic-environment interactions, it is not always possible to rely solely on quantitative judgements. Tools such as environmental management systems, cost-benefit analyses, and environmental impact assessments, frequently involve qualitative values and implicit ethical positions which are hard to ignore. John Bohn (1991) of Moody's Investors Service underlines the scale of the challenge:

“In the 1980s, financial professionals found that they had to scramble up a steep learning curve to master the avalanche of new instruments pouring into the market — the swaps and options, ‘swaptions’, derivatives, and all the other wrinkles of structured

finance. In the 1990s their task is even greater. Grasping the subtleties, and at the same time the vast scope, of environmental issues as they impinge upon finance is going to demand all our intelligence and all out application.”

Former inertia in the capital markets is giving way to adaptation, driven primarily by the spectre of financial loss. One of the results is a loss of traditional neutrality on environmental issues. This shift in attitude has accompanied the development of environmental credit risk management, and is affecting standards and practices of corporate disclosure, accounting, auditing, risk analysis, and strategic asset allocation.

Recognition of environmental risk in the capital markets coincides with the now common view among financial professionals that good environmental practices are a hallmark of good business. A variation on the theme is the faith among bankers that good management will be able to cope sensibly with environmental hazards. In this climate, customer relationships that enable bankers to gain an in-depth knowledge of the business and its operations, could pay dividends over a purely transaction-based service. Furthermore, if companies are to make the necessary adjustments so that their operations are cleaner and less energy and resource dependent, they will need both professional advice and capital investments over the long-term.

Rada and Trisoglio (1992) among others have suggested that one of the changes that the capital markets might make to encourage sustainable development is to adopt a longer-term view of customer relationships, with possibly higher levels of equity participation for some banks. Porter (1992) has argued in another context that short investment horizons in the United States’ are a symptom of a larger, systemic weakness, which is threatening the competitiveness of American companies. Thus economic strength and sustainability can be mutually reinforcing.

Environmental risk management is also related to a grass-roots movement among some banks and businesses to adopt codes of ethically and socially

responsible behaviour. Cooperative, even altruistic actions in the marketplace are hardly new, but the current wave of social and environmental conscientiousness suggests there is a popular demand for a counterbalance to the invisible hand of the market. The suggestion is supported by evidence such as Gallup’s study, *Health of the Planet* (1992). From the results of a twenty-two nation survey, based on over 22,000 opinions, Gallup discovered: 1) that in fifteen out of twenty-two countries, the environment was volunteered as one of the top three most important problems confronting the nation; and 2) that a majority of people in all twenty-two countries believe environmental degradation will affect the health of their children or grandchildren. As Nilsson (1993) has pointed out, two issues were predominant: concern for future generations — intergenerational equity, and sustainability of natural resources. Obviously, these issues are closely linked to the concept of sustainable development.

That social values are influencing law-makers, determining alternative criteria for lending and investment decisions, and steering the concept of fiduciary duty towards a more all-encompassing responsibility for stakeholders, is well established. By tapping this source of social conscience, banks have an opportunity to attract highly motivated employees and depositors. Yet this area remains ill-defined and fuzzy for most financial institutions. More often, environmental risk management programmes are put in place to obtain knowledge of a borrower’s environmental obligations and liabilities; not to generate goodwill, although the two functions may be complementary.

2. CHOOSING AN ANALYTICAL FRAMEWORK

Bankers who endorse the United Nations Statement on Banking and the Environment (1992), and many who do not, share a common conviction that economic well-being and ecological protection are inextricably linked. The general case for a relationship between finance and global ecology is made by several authors including Sarokin and Schulkin (1991), who wrote:

“The rising tide of environmentalism, which has already greatly altered smokestack industries, is affecting the financial services sector as well. As was the case with the manufacturing sector, the impact of environmentalism on the financial community may well be substantial. Banks that do not take an active stance on environmental issues may instead find themselves reacting to a host of societal, financial, and regulatory pressures.”

What are the logical consequences of recognizing an interdependence between ecology and economics? Ecological economic principles, which might deliver a sustainable future, call for an adequate appraisal of complex environmental interactions. Since these interactions are virtually ignored by conventional economic and financial analysis, the prospect of mapping them to gain information on environmental risk challenges bankers’ credulity as well as their ingenuity.

Part of the difficulty arises from incompatible analytical frameworks.

Neoclassical economics, the zeitgeist of the last thirty years, uses an analytical framework that is atomistic, mechanistic, and derived from classical Newtonian dynamics. In contrast, the ecological economic framework is contextual, pluralistic, interconnected with the biological and physical world, and dependent upon the first and second laws of thermodynamics.

From an ecological economic perspective, neoclassical methods are appropriate in limited circumstances and for solving specific types of problems. For example, they reinforce the objectives of precision and control in engineering and manufacturing, which first became important in the industrial revolution. However, they are inappropriate for cost-benefit appraisals that involve environmental values.

From a neoclassical perspective, ecological economics is mostly irrelevant. For example, in a neoclassical economic model it is meaningless to talk

about environmental limits or carrying capacity, because it is assumed that scarcity will trigger price signals that will encourage investment to be directed towards less scarce resources, and towards research in the appropriate technological response.

From a purely practical viewpoint, bankers may wish to leap-frog the argument. To gain an in-depth understanding of environmental risk, however, one cannot ignore environment-economy interactions, which are frequently obscured by neoclassical economic models. Although the problem is by no means easily overcome, several banks have realized that the cost of not trying to solve it is greater than simply ignoring it. They have therefore begun to examine or, at least, recognize the black box of linked economic and ecological systems.

Currently, the dynamics of linked ecological and economic systems are not well understood. What is known is that ecologic and economic systems exhibit the traits of complex systems. Complex systems are characterized by complex exchanges of energy, matter and information, strong (usually non-linear) interactions between the parts, complex feedback loops which make it difficult to distinguish cause from effect, lags, discontinuities, thresholds and limits, and the inability to simply add-up or aggregate small scale behaviour to arrive at large-scale results (Costanza et al, 1994).

A modeling technique that is applicable to complex systems is nonlinear dynamic analysis. Nonlinear dynamic analysis is not only capable of modeling complex systems, it is also very good at distinguishing patterns of random and chaotic behaviour. For example, it helps explain the effects of crowd psychology and fads on speculative markets (Peters, 1991), and the existence of positive feedbacks in the economy (Arthur, 1990). Mandelbrot (1982) used a form of nonlinear dynamic analysis to predict returns on the New York Cotton Exchange. Furthermore, its accuracy in capital market applications suggests that some of the present assumptions about investor behaviour and equilibria in the economy, including the efficient markets hypothesis, are incorrect.

Significantly, for environmental risk analysis, a complex systems approach acknowledges that there are no independent, isolated variables: everything is connected within one large system of perpetually evolving complexity. In effect, it offers an analytical framework that allows externalities, such as taxes and pollution, to be seen as interrelated with the economic system. Within a fully realized ecological economic model, the internalizing of externalities may therefore be a redundant exercise.

3. ENVIRONMENTAL STRATEGIES FOR BANKS

The World Bank and the European Bank for Reconstruction and Development have acknowledged basic ecological economic principles in their mandates and procedures. Commercial banks such as National Westminster Bank and Deutsche Bank have also taken purposeful strides down this road.

So far, in the public sector, three broad strategies have arisen. The first is to adopt internal controls to improve energy efficiency, minimize waste, recycle paper, and generally reduce the impact of the bank's physical operations on the environment. The second strategy is driven primarily by public relations and marketing concerns and may extend to offering intermediation services so that depositors' funds are loaned to corporations with high environmental or ethical standards. A third strategy is to analyze environmental risks according to the financial and credit risks they might impose on the assets of both client corporations and the bank itself. This strategy probably provides the best fit with most banks' core competencies of corporate scrutiny and credit risk management. The majority of banks, which have adopted environmental strategies, have selected this type of environmental risk management method.

4. WHAT IS ENVIRONMENTAL RISK?

From the perspective of public policy analysis, Gillroy (1992) defines environmental risk as a hazard that exhibits scientific uncertainty, irreversibility, latency of effect, and low probability of a catastrophic outcome. According to Gillroy, the challenge for policy-makers

is to decide to what extent should environmental risk be regulated to preserve high levels of environmental quality. He defines environmental quality as the degree to which the natural states of air, water (surface and ground), and land are allowed to persist, and the natural cleaning mechanisms of the biosphere continue to function (including the persistence of natural selection for plant and animal species).

Another way of looking at it, is to consider an intergenerational contract for sustainability. Breaking the contract then becomes equivalent to provoking unwarranted and therefore sanctionable environmental risks. Toman (1992), defines such a contract in terms of a safe minimum standard:

"The safe minimum standard posits a socially determined dividing line between moral imperatives to preserve and enhance natural resource systems and the free play of resource trade-offs. To satisfy the intergenerational contract, the current generation would rule in advance actions that could result in natural resource impacts beyond a certain threshold of cost and irreversibility. Rather than depending on a comparison of expected benefits and costs from increased pressure on the natural system, such proscriptions would reflect society's value judgement that the cost of risking these impacts is too large."

For the purposes of environmental credit risk analysis, the problem with both of these viewpoints is that they do not directly engage the capital markets. They suggest, however, that societies and governments should set physical and biological limits and that economic activities should be kept within those limits.

Clearly, this process is already underway and the prospects for more stringent policy is a distinct possibility. In this scenario, bankers are faced with the choice of defining environmental risk either in terms of financial risks that may affect the present value of their loan portfolio, or in terms of a broader social contract linked to physical limits. Both require a view of the future, but the broader

interpretation might be more conservative in the sense that precautions may be taken before legislative actions or market forces indicate that financial capital might actually be at risk.

5. TOWARDS A PORTFOLIO ANALYSIS THAT INCORPORATES SUSTAINABLE DEVELOPMENT CRITERIA

A portfolio approach to lending and investment that incorporates sustainable development criteria remains experimental. Indeed, an operational definition of sustainable development is elusive. However, there are some interesting, if only general, guidelines from two sources. The first is from Professor Richard Norgaard (1993), who suggests:

“If development is not now sustainable, it is because we are transferring too little capital — natural, human, and produced — to future generations. Thus, sustainability and capital markets are intimately linked from the start. Sustainability will entail greater levels and a different mix of investments in the future, stimulated by new institutions to encourage individuals and corporations to make such investments. [Research] needs to stress 1) the difficulties of determining when investments are resulting in the right mix of “trees and chainsaws” and 2) what institutions might do this best, ie. how might existing companies and agencies involved in finance help in the design of appropriate institutions.”

Other points for considerations are offered by W. Ross Stevens (1993) of E.I. duPont de Nemours and Company:

- (i) A narrow focus on financial risks from operations would be necessary, but by no means sufficient;
- (ii) Assessments must include resource requirements and product impacts;
- (iii) An enterprise’s capability to service environmentally influenced future markets must be included;

(iv) While every effort should be made to assess in quantifiable terms, qualitative assessments may also have a place.

6. DIFFICULTIES IN DETECTING AND INTERPRETING ENVIRONMENTAL RISK SIGNALS

Banks that wish to detect and interpret environmental risk signals face several difficulties that are only partially overcome by state-of-the-art environmental credit risk programmes.

To begin with, neoclassical economic theory treats the natural environment as both a source of free gifts and a sink for freely disposable wastes. Consequently, external effects, such as the depletion and pollution of natural resources, are not automatically incorporated into market prices. The full costs and benefits of environmental goods and services, held both privately and in common, therefore tend to be undervalued. Although methods for explicitly incorporating non-market, environmental values exist in the form of cost-benefit analyses, the methods that are available are more suited to public policy decisions than corporate scrutiny. Where firms have conducted cost-benefit analyses, banks might find it worthwhile to request copies. With the exception of major projects, however, cost-benefit analyses can be unwieldy, inappropriate, and expensive for general credit assessments.

A complicating factor is the distortion of environmental values within the price system. Governments, for example, frequently subsidize energy prices thus contributing to pollution and resource depletion. Market prices are influenced by the relative scarcity of resources, and by factors beyond the boundaries of economics. As Charles Perrings (1987) has commented, “the extra-economic conditions of distribution — cultural, legal, ideological, and political — are also reflected in relative prices”. It would be wrong, however, to assume that a proportional or symmetrical relationship exists between environmental conditions and the market price system. Over fishing in the world’s oceans will not be alleviated by rising

prices that will dampen the demand for fish. A myopic view of market forces, isolated from the real world, can result in surprises within the global system, which financial analysts might call “event risk”. In the fishing industry, an event risk would be the extinction of a species, or the depletion of stocks to the extent that fishing companies involved in extraction and production are unable to repay accumulated debts.

Another difficulty arises from the lack of environmental information currently available in corporate accounts. Even when a firm is potentially liable for environmental damage, the costs are often difficult to determine accurately. In trying to assess the financial risk associated with economic-environment issues, banks may therefore find that they are moving independently of price signals.

Finally, sources of environment risk often lie beyond the traditional scope of credit analysis. For example, a chemical company might appear to be financially sound. But, if it depends heavily on exports to a country that has just placed its biggest-selling product on a list of environmental hazards, it may not be immediately obvious to the bank’s loan officer or an environmental auditor hired for a phase I site assessment.

PART II

Environmental Risk Signals

1. INTRODUCTION

In the context of this report, an environmental risk signal is credit sensitive information arising from a broad range of sources. A leaking oil drum on a borrower’s property, a new environmental law, news that hurricane damage in the Caribbean has sent the price of catastrophe insurance beyond the level that mortgagees are prepared to pay, are but a few examples. In general, these signals arise from disturbances in environmental quality; from the observation and measurement of natural resource degradation by the scientific community; from the

influence of populations concerned for the safety and welfare of present and future generations; from social institutions such as governments and legislative bodies; and from the economy itself through the price system, and through changes in commercial strategy and consumption patterns.

In Part II, two broad categories of environmental signal are identified and examined: legal and regulatory signals and market forces. It is far from an exhaustive study. The aim is to bring attention to the relevance of specific types of signal, rather than list, for example, every legislative act that might have an affect on credit quality.

2. LEGAL AND REGULATORY SIGNALS

2.1 The Aims of Environmental Legislation

Legislation to protect human health and the natural environment can be attributed to specific, historical events that have led to public outcry and, thus, have forced legislative change. Examples include the “Love Canal” incident in the United States, which lead to “Superfund” legislation, and the London Smog of 1953, which resulted in the Clean Air Act of 1956 (Tromans, 1991). Law makers have also taken notice of public pressure and scientists’ warnings to draft legislation that anticipates and dissuades environmental degradation through mechanisms that provide compensation for damage and modify behaviour to protect natural resources. It should be noted, however, that the roots of environmental law and policy analysis are both anthropocentric and market-oriented. This means that environmental judgements turn on calculations of how well human wants, discounted over time, are satisfied (Tribe, 1974). Intrinsic environmental values, which might help determine the rights of future generations, or the rights of plants or animals, are derived from ethical positions that are not well represented by current legislation.

2.2 The Polluter Pays Principle

The principle of the polluter pays recognizes judicial ideas of fairness and culpability and, also, the need to

levy costs on economic activity that harms the environment. Conceptually, it meets the aims of compensation and behaviour modification using market rationale. First formulated by the OECD Council in 1972, the polluter pays principle is an accepted part of European Community environmental policy and is gaining widespread acceptance elsewhere. The Canadian Bankers Association, the Australian Bankers Association, and the British Bankers Association, among others, support it.

Companies are naturally disinclined to pay for something that was once free. Yet many are willing to develop innovative skills to lower energy consumption, minimize the use of dangerous and toxic materials, and mitigate the environmental impact of their operations, especially if they can gain competitive advantages. The prospect of paying for the right to pollute is one factor encouraging companies to develop environmental management systems and to invest capital in activities that are environmentally benign.

Taken to its logical conclusions, the polluter pays principle involves internalizing external environmental costs, sometimes known as “full-cost” pricing. Full-cost pricing means paying not only for environmental damage to private property, but for the depletion and pollution effects on resources held in common such as clean air, water, and biodiversity. Industry has yet to adopt full-cost pricing. Indeed, an operational model remains elusive.

2.3 The Precautionary Principle

The precautionary principle attempts to answer problems of environmental risk and uncertainty where scientific evidence is inconclusive but there is sufficient concern to justify preventive action. For example, the Intergovernmental Panel on Climate Change (IPCC) has been unable to reach clear conclusions about the impacts of increasing concentrations of “greenhouse” gases in the atmosphere, but acknowledges that the possibility for harm exists. Increasing land and sea temperatures, greater frequency of hurricanes, desertification in some areas and flooding elsewhere, the potential

impacts on the hydrological cycle, agriculture, patterns of migration, and so on suggest a need for a strategy to minimize stress and uncertainty. Hence, the IPCC has invoked the precautionary principle.

The precautionary principle is found in German environmental policy and law, and specifically reflected in the Federal Air Pollution Control Act (BImSchG), the Chemicals Act (ChemG), and the Genetic Engineering Act (GenTG). It effectively gives authorities the right to intervene in commercial activities suspected of causing environmental harm, not only when danger is imminent or threshold levels have been exceeded (Brealey, 1993). The United Kingdom has also incorporated the principle in the September 1990 White Paper on Britain’s Environmental Strategy. The British approach is based on the common sense assumption that “prevention is better and cheaper than cure”.

From a bank’s perspective, precautionary principles can be interpreted simply as taking a conservative attitude to credit analysis. Yet the United Nations Statement by Banks on Environment and Sustainable Development clearly goes further by advocating a “precautionary approach to environmental management, which strives to anticipate and prevent potential environmental degradation” (UNEP,1992). This sentiment is echoed in the ministerial declaration at a conference in Bergen, Norway in May 1990, attended by thirty-four states of the UN Economic Commission, which stated:

“Environmental measures must anticipate, prevent and attack the cause of environmental degradation. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.”

A radical interpretation of the precautionary principle is that it should moderate or override cost-benefit policy choices which, if executed, could irreversibly harm the environment for future generations. This interpretation recognizes a salient characteristic of environmental risk: that it usually

exhibits a low statistical probability of a catastrophic environmental outcome. Thus, the risk of an environmental disaster is deemed insignificant when compared, for example, with the certainty of economic benefits that flow from the operation of a nuclear power generator. It also acknowledges the role of institutional structures and mechanisms in the creation of environmental risk, particularly those institutions that embrace market rationale in the decision making process. As Mary L. Walker, Assistant Secretary for Environment, Safety, and Health, Department of Energy, testified before a United States congressional subcommittee in 1986, after news of the meltdown of the Chernobyl nuclear reactor, "there is no valid reason to discontinue operation of U.S. reactors that are so vital to our economic well-being" (Gillroy, 1992). In this context, the precautionary principle is, potentially, an instrument of ethical choice that redresses the imbalance of probabilities and assigns an intrinsic value to the environment beyond whatever value might be assigned by pricing mechanisms.

2.4 Lender Liability

Environmental laws and regulations can directly affect a bank's assets by imposing liability on the bank for clean-up costs. They can also have an indirect effect by impairing the creditworthiness of the borrower, diminishing the value of the borrower's security, or undermining the priority of the bank's lien on security. Bankers need to observe how civil liability is assigned to both lender and borrower. Criminal liability is also relevant when control of the borrower occurs through the exercise of covenants in loan agreements, or when lenders are either directors or "shadow directors" of the borrowing company. Shadow directorship can arise, for example, in cases of insolvency.

Credit risks vary according to the severity of the liabilities imposed on lenders and borrowers, the cost of compliance, and the enthusiasm with which laws and regulations are supported and damages awarded by regulatory agencies. Uncertainty originates from a lack of clarity in the law, and from legislative frameworks that fail to offer adequate protection for creditor rights. The imposition of

environmental legislation can also create economic distortions through transaction costs, costs to the tax payer for regulatory control, and by providing incentives or disincentives to market innovation. Furthermore, differences in environmental laws and regulations, from one jurisdiction to the next, can cause complications for credit risk and due diligence procedures.

Financial institutions with extensive international exposures may choose to apply more rigorous environmental credit risk analysis standards, which they may adjust as necessary to comply with local environmental laws and regulations. Richard Horsch, head of White and Case's environmental law practice in New York, confirms that a similar approach is already taken by several American multinational corporations. The advantage for these companies, which strive to achieve good environmental management practices irrespective of the country in which they operate, is that they can take the toughest legal and regulatory regime as a benchmark. Environmental management can then function with greater flexibility to figure out strategy, cost/benefit tradeoffs, and standard operating procedures while avoiding the opprobrium that can result from inequitable international practices.

2.4.1 Lender Liability in Germany

In certain jurisdictions, such as Germany, there is no direct lender's liability. Ownership of land or even the influence of a lender on the management of an enterprise is not sufficient to make the lender responsible for pollution. Nevertheless, German banks must consider reduced values for collateral affected by contaminated soil and groundwater, as well as the very expensive environmental protection measures that can prejudice the borrower's debt service capability.

2.4.2 Lender Liability in the United States

The American Bankers Association (ABA) handbook *Environment Risk* (Chapman and Cutler, 1993) identifies four primary risks to banks created by environmental laws and regulations:

(i) The cost of cleaning up contamination may be so high that the borrower is unable to make scheduled payments on a loan.

(ii) The value of real estate collateral may be diminished because of contamination or the stigma of previous contamination.

(iii) The priority of a bank's lien may be affected by clean-up cost liens or the operation of bankruptcy law and proceedings.

(iv) The bank may be liable for cleaning up the borrowers' collateral in the event the bank becomes a liable owner or operator of the real estate. Since contamination clean-up costs usually are unrelated to the value of the real estate, the cost of clean-up may exceed the amount of the loan or the uncontaminated value of the real estate.

Chapman and Cutler also observe that when a borrower is liable for civil and criminal penalties, and damages for injury to natural resources and the environment, it could become a credit issue. Their strategies for avoiding and minimizing liability are threefold: proper documentation, avoiding entanglement in the borrower's business, and proper due diligence.

2.4.3 Lender Liability in the United Kingdom

Lender liability concerns in the United Kingdom are similar to those in the United States. In a paper presented at the British Bankers Association (BBA) meeting on October 13, 1993, David Brock of the law firm Herbert Smith made the following remarks concerning environmental risks:

"The risks for banks basically arise in three ways. In the first, a borrower goes under because of some environmental liability. The bank is left claiming in the liquidation. In the second, the borrower defaults on a loan and the bank seeks to enforce its security. Owing to environmental problems, buyers cannot be found at a price which repays the bank. In the third, the borrower defaults and the bank becomes liable through control".

Brock contends that problems of environmental risk are essentially problems of assessing the suitability of the borrower and the security. Since it is difficult to obtain information on potential environmental liabilities, he makes two suggestions. First, that a scoring system might help indicate the value of a property based on location and previous uses. Second, that banks might require borrowers to implement the European Community Environmental Management and Audit Scheme (EMAS) or the similar British Standard on environmental management systems, BS 7750. In addition to precautions at the initial lending stage, prudent action is necessary when realizing the security.

2.5 Contaminated Site Remediation: A Primary Consideration in Credit Analysis

Lender liability is most critical because of contaminated land and water problems. In the United States, the average cost of site clean-up increased from \$2.5 million to \$32 million over a period of twelve years (NatWest, 1993). The enormous costs of contaminated site remediation and the resulting risks to collateral values and borrower creditworthiness have compelled many banks to give primary consideration to the problem in their environmental credit risk analyses. The scale of potential liabilities has led some banks to reconsider their use of real estate for loan security and to reject loan applications from companies operating in high-risk industries.

2.6 Towards Comprehensive, Integrated Approaches to Financial Liability for Contaminated Site Remediation

To date, few jurisdictions have drafted comprehensive schemes for dealing with contaminated sites. Typically, a complex matrix of laws and regulations governs the manufacture, use, disposal, importation, and transportation of substances deemed hazardous to the environment. Authority for promulgation and regulation of laws and standards might be divided among various institutional bodies, which may or may not change between national, regional, and local jurisdictions.

Because of intricate and obfuscating legislation, several groups are formulating comprehensive systems to govern the remediation of contaminated sites. The Australian and New Zealand Environment and Conservation Council (ANZECC), the Canadian Council of Ministers of the Environment (CCME), the European Commission, the Council of Europe, the British House of Lords Select Committee on the EC, among others, are examining and reporting on alternative methods for managing site clean-up and assigning financial liability. Even in the United States, where a two-part programme for retrospective and future contaminated site remediation has existed since the late 1970's, re-appraisals of the legislative approach, and modifications in the courts, are ongoing.

In view of the United States' experience and the uncertainty of legislative developments in other jurisdictions, many banks are having to deal with a multiplicity of laws and regulations while trying to predict the outcome of various institutional exercises to formulate new, comprehensive schemes.

2.7 Assigning Liability — Who Should Pay for Site Remediation? (ANZECC, 1993)

Prevailing opinion in the banking community is that the polluter should pay. But who should pay when the polluter cannot be found or identified or has become insolvent? Governments want to minimize the financial burden for taxpayers. Businesses want to minimize costs to maintain commercial viability. Banks obviously wish to avoid lender liability. There are several different approaches to deciding who should pay for the remediation of a site. They include:

(i) The Fault-based Approach — Liability attaches to the party that has breached a particular standard of care, or who has intentionally, recklessly or negligently caused damage or harm. This approach is usually based upon existing common law notions of tortious liability. When fault cannot be determined, remediation costs are paid by innocent parties or the government and, thus, the community.

(ii) The Risk-based Approach — Under the risk-based approach, anyone who threatens to impair environmental quality or derives a benefit from doing so should bear a share of the risk. In the context of contaminated sites, this means that “a wide range of parties, including lenders, who ... derive financial benefits from projects that potentially or actually pose a threat to the environment, would bear a proportion of the costs involved with such projects, including remediation” (ANZECC, 1993). Legislation that assigns liability to owners and operators of contaminated property, whether or not they actually caused the contamination, is risk-based.

(iii) Strict Liability — Strict liability does not require proof of fault, as is required in under negligence, neither is there any requirement of standard of care. The only proof required to establish liability is that damage was caused by someone's act. Its main advantage is that assigns liability quickly and without excessive cost. It can also be an effective basis for the polluter pays principle, as recommended by the Australian Bankers Association (ABA, 1993). David Brock (Herbert Smith, 1993) suggested, with respect to the European Commission's Green Paper on Remedying Environmental Damage, that one disadvantage of strict liability is the potential lack of definition on who should be liable and what specific activities will be deemed to be polluting.

(iv) General Funds for Remediation Costs — This method does not require any determination of liability. It simply calls for industry and government to levy funds so that a pool is created to cover the costs of remediation. Use of such funds is contrary to the polluter pays principle. A drawback is the lack of incentive for industry to limit pollution. On the other hand, it avoids the considerable costs associated with identifying responsible parties and apportioning remediation costs.

A variation of the general fund is the voluntary or compulsory environmental liability insurance scheme. A voluntary scheme of this type operates in the Netherlands. Potential polluters pay rates

according to their size and the scale of the risks imposed by their activities. Insurance policies cover all or a part of the costs of site remediation.

These are cursory descriptions of some different approaches to funding site remediation. All of the above methods can exist within one jurisdiction. While it is beyond the scope of this report to examine all the benefits and disadvantages of each of these approaches, it is important to note that the trend among legislative authorities in North America and Europe is to opt for risk-based approaches and strict liability.

2.8 The Impact of Lender Liability on Credit Policy

A recent survey (GHK International, 1994) conducted for the European Bank for Reconstruction and Development (EBRD), showed that outside Asia almost 100% of respondent banks routinely appraise new or prospective legislation and/or regulations for lender liability implications. A common view was that legislation had little or no effect on loan structure. It did, however, have an impact on the use of property as collateral, and on loan procedures such as company investigations and appraisals, and the use of consultants. Furthermore, the uncertainty of the current regulatory climate, particularly in Europe, is causing many banks to regard environmental liability as a significant threat to future profitability.

An American Bankers Association (ABA) survey of 12,000 community banks in 1991 on the subject of lender liability underlined the problem of a diminishing pool of affordable funding for environmentally risky businesses. Among the findings of the survey were the following:

- (i) Approximately 51% of banks required environmental audits for some new loans.
- (ii) Nearly 17% had abandoned a property rather than taking title because of environmental concerns.
- (iii) Almost 63% had rejected loan applications or potential borrowers based on the possibility of environmental liability.

(iv) Approximately 88% had changed lending procedures to avoid environmental liability.

(v) Since 1986, 30% of real estate loan applications had been rejected because of environmental concerns.

(vi) Almost 46% of banks had stopped providing loans to high-risk businesses including automobile service stations and businesses dealing with chemicals.

In the United States, several regulatory agencies including the Federal Deposit Insurance Corporation (FDIC), the Federal Reserve System, the Office of the Comptroller of the Currency, and the Office of Thrift Supervision have issued guidelines recommending lenders develop policies and procedures to address environmental risks.

Personal interviews conducted in Europe and North America as part of the research for this report indicate: first, that higher transaction costs, incurred because of environmental credit risk analysis, could be passed on to the customer; second, that borrowers with exposures to environmental risk could be charged higher interest rates, or the terms of loan could be adjusted. One bank claimed they had sold at a discount substantial land holdings where contamination was deemed probable because of historical industrial uses.

2.9 Some Reservations Concerning the Use of Legal and Regulatory Signals

When a lender can incur clean-up costs for a contaminated site, many times the value of its original loan, environmental legislation clearly becomes a critical factor in the analysis of risk and reward. Financial institutions must tackle the legal environmental risks that apply directly, as with lender liability laws; and indirectly, when a firm's environmental costs and sanctions can diminish the value of collateral, impair going concern value, and jeopardize debt service capabilities. Also, legal implications for financial services companies are wide ranging and may affect the drafting of many

agreements, from residential mortgages to corporate financings to mergers and acquisitions. But to concentrate exclusively on legal and regulatory factors is to mistake cause for effect. Moreover, to assume that environmental issues are solely a legal problem may invoke a reactionary attitude, which can fail to encourage predictive capabilities and dampen opportunities for innovation. The legal and regulatory framework is, of necessity, reductive. It is also confrontational. So it tends to produce “win-lose” scenarios as opposed to scenarios that are cooperative and mutually beneficial.

A more comprehensive approach can reframe essential questions. Thus, the legal question, of how banks institute environmental guidelines for the protection of real-estate supported credits, becomes the more fundamental question of how lenders and investors deal with greater uncertainty governing the value of real-estate and its function as security. One can then see the possibility of multiple impacts corresponding with a plurality of possible responses, one of which is law-related.

Regulation is now the greatest determining factor in environment-related price movements. The law, however, does not determine environmental risk. Environmental risk, or perceptions of it, determine the law. It is important, therefore, for the capital markets to be able to go to the source of change, which is the real world, as well as to the regulatory consequences to obtain a comprehensive picture of environmental risk.

Finally, there is an essential distinction between command-and-control methods and market-based methods of environmental protection. The latter incorporate information characteristics of the marketplace, which tend to mesh better with primary decision-making processes in firms. Consequently, they are more suited to achieving a high level of efficiency than regulatory measures, which are intrusive and restrictive. For banks, it therefore makes sense to examine how they might be accountable for environmental risk in terms of market forces.

3. MARKET FORCES

3.1 The Cost of Environmental Obligations and Liabilities

Many people believe that polluters should pay for the mess they cause instead of passing the costs onto society. Accordingly, governments have written laws, set standards, and imposed bans to bring the malefactors into line. So far, governments have preferred command-and-control methods to market-based methods such as taxation and emissions charges, primarily because they have found them more popular with voters. By the same token, industrialists have discovered that command-and-control methods are often negotiable and, to a degree, enforcement is flexible. Allowances can be made for the timing of capital investments in cleaner technology; subsidies may be granted to compensate for diminished business opportunities; latitude is sometimes permitted in the setting of standards.

Some firms have benefitted from technological advantages over their competitors. For example, anyone with patents for chlorofluorocarbon (CFC) substitutes after the Montreal Protocol was signed was in a good position to make a profit. Other firms, selling energy efficiency or waste-management services, legal advice, environmental auditing and consulting services, also benefit when new rules increase demand. Yet, for a great many firms, environmental obligations and compliance have resulted in enormous costs.

Much of the environmental data that is currently available to banks is compliance related. So far, very little is translated onto corporate balance sheets. Price Waterhouse's survey of United States' manufacturing and extractive industries revealed that 62% have material environmental liabilities which have not yet been disclosed (New York Times, March 13, 1993). Similarly, Barth and McNichols' (1994) report that companies responsible for Superfund site clean-up have been recording only small liabilities.

Much of the information on the obligations and

liabilities resulting from the enforcement of environmental regulations comes from the United States. As such, it provides a testing ground and, many suspect, an indication of future developments elsewhere. Perhaps the single most notorious piece of legislation in the United States is the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, or "Superfund"). Designed to provide the means for cleaning up hazardous waste sites, CERCLA gives the United States Environmental Protection Agency (EPA) the statutory right to undertake site remediation and collect costs from parties responsible for site contamination. Originally passed in 1980, CERCLA was renewed and amended in 1986. Passage into law of the Clinton administration's Superfund Reform Act of 1994 (HR 3800) is pending.

The EPA first estimated a cost of \$8 million for cleaning up an average Superfund site. This figure had increased to \$25 million per site by 1991. The Chemical Manufacturers Association conducted its own studies in 1988 and claimed significantly higher costs ranging from \$11 million to \$60 million per site, excluding several of the very large sites. The Federal Office of Technology Assessment has estimated the overall cost to be \$500 billion over the next 40-50 years, not including costs associated with Department of Defense and Department of Energy facilities. A University of Tennessee study estimated an upper limit as high as \$1.17 trillion.

In addition to Superfund, American companies must contend with a host of other federal and state laws. Federal legislation includes the Resource Conservation and Recovery Act (RCRA), the Clean Air Act (CAA), the Clean Water Act (CWA), the Emergency Planning and Community Right to Know Act (EPCRA), the Toxic Substances Control Act of 1976 (TSCA), the Asbestos Hazard Emergency Response Act (AHERA), the National Environmental Policy Act (NEPA), the National Historic Preservation Act (NHPA), the Fish and Wildlife Coordination Act (FWCA), and the Coastal Zone Management Act of 1972 (CZMA). The EPA estimates that compliance with RCRA alone will cost American industry \$34 billion annually by the year

2000. The EPA's current estimate for compliance with all environmental regulations in the United States is \$100 billion annually. Non-compliance can also have serious repercussions. United Technologies was recently fined \$5 million; the United States Justice Department fined and jailed 135 individuals in 1993 for environmental crimes.

3.2 The Impact of Environmental Obligations and Liabilities on Selected Industries

In two reports, *Environmental Risks and Corporate Credit Quality* (April, 1991), and *Impact of Environmental Regulation in the United States* (January 1993), Moody's, the rating company, outlined its views on the industries most likely to bear substantial costs for environmental compliance and remediation. Those industries include electric utilities, the petroleum industry, paper and forest products, steel, automobiles, electrical equipment, metals and mining. According to Moody's, the magnitude of financial obligations should be seen in the context of an individual company's global competitive position. Furthermore, because of changing and increasingly stringent environmental regulations, future cash flow and profitability are subject to uncertainty, thus escalating the financial risks for lenders and investors.

Although Moody's comments relate specifically to the United States, the company notes that many of these industries compete internationally, and environmental concerns in Europe and the Far East will become more important. The following descriptions draw extensively but not exclusively from Moody's reports. A proviso to Moody's assessments is that the data, on which they base their ratings and opinions, is historical. Environmental factors not currently reflected in corporate reports and financial statements are, largely, omitted. For example, they do not appear to assess a company's competitive advantages in terms of its ability to adapt to environmental concerns. However, they admit that "from a global perspective, those companies that are aggressive in their efforts to minimize waste generation will ultimately have the advantage".

3.2.1 Electric Utilities

Power generating companies burning fossil fuels must contend with the Clean Air Act Amendments (CAAA) of 1990, which mandate nationwide reductions in the emissions of sulphur dioxide and nitrogen oxides. There is some choice in compliance. One method is to switch from high-sulphur coal to low-sulphur coal, or even oil or gas. Another, more costly method is to install flue-gas desulphurization equipment (scrubbers). Switching fuels limits the up-front capital expenditure and can be more economical for older plants. Disadvantages include higher prices and increased price volatility for low-sulphur coal. Also, other pollutants covered by the CAAA are not reduced. Scrubbers require a large initial capital investment and can reduce plant efficiency by as much as 10%, but may offer longer-term advantages by eliminating other pollutants.

Within the CAAA are market-based incentives for utilities to reduce emissions and, thereby, earn emission credits, which can then be traded on the market. In practice, the market for tradeable emission permits has, so far, been hampered by a number of factors including stockpiling, lack of transparency, and restrictions inherent in existing command-and-control legislation.

In addition to the costs of emission compliance, utilities may face potential environmental liabilities from the contaminating effects of polychlorinated biphenyls (PCB)s in electrical substations. PCBs have, in the past, been used extensively in electrical transformers and represent a threat to soil and groundwater quality.

3.2.2 Petroleum Industry

The petroleum industry is responsible for a broad range of environmental risks in exploration, petrochemical and plastics production, refining, distribution and storage. Environmental spending for the exploration segment is associated primarily with the risk of toxic releases, site clean-up, and drilling wastes such as sump fluids and treatment chemicals. Petrochemical products manufacturers

face challenges of safety and environmental risks, because many of their products are more volatile than they are toxic. Vapour cloud release potential and the potential impact on the surrounding area is an essential cost factor. It also limits the viability of future production facilities in locations where people take a "not in my back yard" (NIMBY) attitude.

According to Moody's, the CAAA will have a dramatic effect on the downstream petroleum industry in the 1990s, affecting investment decisions, manufacturing and processing practices, and restructuring strategies and product marketing. The CAAA mandates specifications and a timetable for the production of oxygenated and clean-burning fuel, low-sulphur diesel fuel, and stationary toxic emissions. Estimated costs of the CAAA and other environmental compliance orders vary widely from one company to the next. Texaco, alone, plans to spend \$1.5 billion annually over a five year period on environmental compliance and emission reductions. Some studies place environmental spending in the petroleum industry at \$15 billion to \$23 billion per annum by the year 2000. To put these numbers in context, the entire United States petroleum refining industry has a book value of \$29 billion. Moreover, the majority of planned investments are non-discretionary, and are therefore not expected to contribute to improved operating efficiency, lower unit costs, or enhanced product yields.

3.2.3 Chemical Industry

The scope of environmental hazards within the chemical industry is very wide and includes the production of organic and inorganic chemicals. Contamination risks are particularly prevalent for facilities using chlorine as a raw material, and for wastes that contain chlorinated derivatives.

Despite some of the highest exposures of any industry to environmental compliance costs and liabilities, Moody's is upbeat about the attitudes taken by leading chemical companies. This reaction is based primarily on the evidence of management's responsiveness to resource conservation and, also, on the evidence of accounting procedures, which have

indicated reserves to cover anticipated future costs for cleaning up known waste sites. Moody's believes that the chemical industry has successfully absorbed the costs of pollution control facilities and environment-related product testing with no noticeable impact on either growth or profitability. Even uncertainty attending the eventual costs of Superfund clean-ups is expected to have a negligible effect on the capital structure and debt ratings of the large chemical companies.

3.2.4 Paper and Forest Products

This industry faces pressure to reduce or eliminate chlorine bleaching, which has negative effects on water courses, soil and wildlife. Facilities that used chlorine bleaching agents in the past may be liable for costly site remediation. There are also increasingly tough restrictions on logging operations. Moody's believes that liabilities in the industry are likely to be manageable and spread over many years. Thus, the impact on corporate creditworthiness is expected to be minimal.

3.2.5 Steel Industry

In the United States' steel industry, many of the costs associated with dramatic reductions in air and water pollution, and waste generation, were incurred over the last twenty years. They peaked in 1979 at approximately \$625 million and subsequently declined during the 1980s to a level, in 1993, of about \$200 million per annum. According to Moody's, these costs have contributed to the industry's low overall profitability and declining creditworthiness. They may also have contributed to competitive disadvantages in the 1970s and 1980s. During this time, many older, more inefficient facilities were closed, and cleaner steel-making processes were developed. Coordination of international regulations combined with the strength of overseas environmental lobbies has recently produced a more uniform competitive field.

In the 1990s, the industry is forecast to pay an estimated \$5 billion to rebuild coke ovens in compliance with the 1990 amendments to the CAA.

Further reductions in coking capacity are anticipated. The shortfall should be met by imports, and by the development of new technologies that do not require coke. Steel mills situated on properties that are contaminated by past operations may incur additional clean-up costs. Slag piles containing hazardous substances, soil and groundwater contamination, could make site remediation very expensive, if not impossible to accomplish.

3.2.6 Automobile Industry

Air pollution and land and water contamination are challenging all car makers to clean up. Their environmental exposures are similar to those of many companies in heavy industry, including potential liabilities for the remediation of Superfund sites. Each of the big three United States' car manufacturers pays about \$200 million per year for production emissions controls, and this amount is likely to increase as stricter standards are introduced.

Car makers have significantly improved car exhaust emissions and energy efficiency over the past twenty-five years, but there is no sign that compliance standards will become any softer, or that research and development efforts in this area will diminish. Moody's anticipates that car makers will continue to invest in research and development for pollution control and fuel reduction throughout the 1990s.

Auto manufacturers will also be subject to competition through innovation. For example, Volkswagen-Audi and BMW are designing new models with recycling in mind. In limited cases, manufacturers are disposing of used vehicles as part of the original purchase agreement. Meanwhile, California has begun to set mandates for non-petroleum cars on its roads in the next century.

3.2.7 Electrical Equipment Manufacturers

One of the more notorious waste products of this industry is polychlorinated biphenyls (PCB)s. The attraction of PCBs is their stability, non-degradability, and non-volatility at high

temperatures. Unfortunately, these qualities allow PCBs to accumulate in living organisms. Although they have not been manufactured in the United States since 1977, they remain in transformers and capacitors as coolants and lubricants. When the equipment was originally built, there was the potential for PCBs to be spilled. Now, as the equipment ages and is dumped, there is again the possibility that PCBs will leak into soil and groundwater. Many large American manufacturers of electrical equipment have made reserves against contaminated site remediation.

3.2.8 Metals and Mining

Moody's reports that the United States' metals and mining industry has, previously, made large financial provisions to cover known environmental exposures and will no doubt do so, again. In its favour, the industry is credited with having made progress in controlling some of its more lethal practices such as the use of cyanide in the recovery of gold. United States' copper smelters now meet stringent emissions standards. However, operating costs associated with air and water quality controls and hazardous waste problems are likely to remain high. There is also uncertainty concerning liabilities for less environmentally sound practices in the past.

In Canada, it is impossible to break new ground for a mine without first putting up financial assurances to clean up the land after the mine has ceased operations. Conceptually, this plan is similar to the bottle return scheme used by many consumer's drinks manufacturers.

3.3 Competitive Advantage & Profit in the "Eco-Industrial Revolution"

Environmental issues are driving new markets for cleaner production processes, environmentally safe techniques and equipment, environmental management systems, new fuels and materials, waste disposal services, consulting services, auditing, site remediation and so on. The OECD has estimated the market for environmental goods and services to be worth approximately \$700 billion a year within the

OECD. Similarly, growth estimates for the Asian market are high. Waste Management Inc., with sales of \$10 billion a year, sees Asia spurring its growth in the 1990s (Eco, January 1994). Asian countries not only have the need and, increasingly, the legal requirement for environmental goods and services; they also have the money to pay for it. The environmental journal Eco (January, 1994) reports that the biggest markets are in three areas: 1) improving the cleanliness and efficiency of energy generation, 2) building integrated waste management systems and 3) applying bioremediation technology in natural resources processing.

One cannot concentrate on the environmental goods and services markets, without also examining the impact of environmental issues on the rest of the economy. Dr Matthew Kiernan (1994), Chairman of the Innovest Group has stated that:

"The real challenge, looking forward, is to identify those companies within a wide variety of industry segments that are best positioned to benefit from the new drive to eliminate pollution from the production process, to reduce waste at the source, to achieve higher levels of energy efficiency, and to cut all production costs, including those for waste treatment."

On an operational level, bankers who wish to identify such companies will not only attend to compliance levels and market signals, but will also learn how to read corporate environmental management systems. With this capability, the system might be checked periodically without necessarily delving into the minutiae of environmental obligations and liabilities, or undertaking costly due diligence procedures. Currently, few companies have environmental management systems in place. The situation is changing as more companies realize the benefits and potential cost savings that can be achieved, and as more financial institutions insist upon detailed environmental reports before granting loans and investments.

Strategically, the implications are profound. As Joan Bavaria (1994), President of Franklin Research & Development Corporation, puts it “companies in some industries must challenge their reason for being, or their core competencies. Is an oil company in the oil business long term, or in the fuel business, or in the energy business?”. Inevitably, banks who decide they are in the risk management business, and wish to have integrated risk management systems, will also integrate environmental risk strategies. This process has begun at several banks but is not yet complete.

Part III

Environmental Credit Risk Programmes

1. INTRODUCTION

Environmental credit risk programmes are formal guidelines — policies and procedures, questionnaires, worksheets and checklists — for the assessment of a borrower’s actual or potential exposure to environmental liabilities. An environmental credit risk programme may also stipulate provisions in loan documentation that should be used to safeguard the bank against environmental losses and liabilities.

In Part III, the American Bankers Association (ABA) Environmental Risk Program (Chapman and Cutler, 1993) is introduced: first, by describing the Federal Deposit Insurance Corporation (FDIC) guidelines on which it is based; second, by examining the specific implementation materials that make up the core of the programme (see appendices 1-4). The ABA Environmental Risk Program is, of course, closely tied to the United States’ legal and regulatory regime and, in particular, the Comprehensive Environmental Response, Compensation Act (CERCLA). Nevertheless, it may prove to be a comparative starting-point for environmental credit risk programmes, elsewhere.

Also, in Part III is a description of the eight indicators used by GEO Bank of Geneva to evaluate environmental performance.

2. FDIC GUIDELINES

On February 25, 1993, the FDIC published guidelines for an environmental risk programme. Their purpose was to inform lending institutions that appropriate safeguards and controls would be required to limit exposure to potential environmental liability associated with real property held as collateral. Rather than dictating specific procedures, the FDIC provided information and recommendations for implementing an environmental risk programme that could be tailored to the needs of individual lending institutions. The guidelines detail eight elements that should constitute an environmental risk programme: training, loan policies and procedures, initial environmental risk analysis, structured environmental risk analysis, loan documentation, monitoring, avoiding involvement in the borrower’s operations, and foreclosure.

2.1 Training

The guidelines require that sufficient training is provided to ensure that the environmental risk programme is implemented and followed within the bank and that appropriate personnel have the knowledge and experience necessary to determine and evaluate potential environmental concerns. When environmental issues are sufficiently complex, the bank should consult legal counsel, environmental consultants and other qualified experts.

There are two general approaches to training. First, the bank may provide environmental risk training for all loan officers and other personnel involved in credit analysis. This method usually keeps environmental issues within established decision-making procedures. In limited circumstances, questions are referred to senior officers or specialists who may apply more extensive knowledge and expertise to the problem.

The other approach is to establish a dedicated environmental services group within the bank. This group may then be called upon to conduct environmental due diligence and audits as necessary. The advantage of this approach is that environmental

issues can be examined more closely, and loan officers may remain free to complete other tasks.

2.2 Loan Policies and Procedures

Documented loan policies and procedures should identify the types of environmental risks that are pertinent to the bank's specific lending activities. For example, it might identify the types of risks usually associated with industries and real estate in the bank's trading area. Guidelines should be established for conducting an analysis of potential environmental problems, and for resolving those problems should they occur. Procedures for the resolution of environmental problems might also be developed for credit monitoring, loan workouts and foreclosures.

Banks may wish to consider whether policies and procedures should set out unacceptable environmental risks associated with certain types of property use or other conditions that present an unreasonable risk of loss.

2.3 Initial Environmental Risk Analysis

A initial environmental risk analysis needs to be conducted as part of the loan application process. The FDIC suggests that much of the necessary information can be gathered by the loan officer in interviews with the loan applicant, and by designing the application procedure so that relevant information is requested. This might take the form of a questionnaire and inspection checklist. Relevant information includes past and present uses of the property and the occurrence of any contacts with federal, state or local environmental authorities. A visit to the site of the loan applicant's facilities might also be useful to detect any obvious evidence of environmental concerns.

2.4 Structured Environmental Risk Analysis

Whenever the initial environmental risk analysis indicates a possible environmental concern, a more thorough, structured analysis is required, usually by a qualified specialist. Within the scope of a

structured environmental risk analysis might be a survey of past ownership and uses of the property, inspections of the site and adjacent property, and reviews of company records for past use or disposal of hazardous materials. Public records might also be examined to discover whether the loan applicant has been cited for violations of environmental laws and regulations, and whether the property has been identified with having significant environmental contamination.

The guidelines resemble the basic requirements of a phase I environmental site assessment for real estate transactions. The American Society for Testing and Materials (ASTM) has developed phase I standards, E1527 and E1528, which may be appropriate.

2.5 Loan Documentation

Loan documents are used to safeguard the lender against potential environmental losses and liabilities. They might require the borrower to comply with environmental laws, disclose information about the status of real estate collateral and grant the lender the right to acquire additional information about potential environmental hazards. Loan documents might also grant the lender the right to call the loan, tighten credit limits, or foreclose in adverse circumstances. Loan documents might also include indemnities and guarantees for environmental liability associated with real estate collateral.

2.6 Monitoring

The FDIC guidelines require lenders to monitor the borrower and the status of real estate collateral for environmental liabilities during the course of the loan. Of particular concern are changes in the business activities of the borrower that might result in increased exposure to environmental liabilities. The borrower might also periodically check the condition of the collateral for environmental contamination. Different levels of monitoring will be appropriate for different property uses and different borrowers.

2.7 Avoiding Participation in the Borrower's Operations

Under the Federal Superfund law, CERCLA, a lender may claim an exemption from liability as the holder of a security interest in real estate collateral. This exemption may be voided, however, if it can be proved that the lender's actions in monitoring the loan and resolving environmental concerns constituted "participation in the management" of the business. Avoiding the claim of participation will require provisions within the policies and procedures, and possibly guidance from legal counsel when there is uncertainty.

2.8 Foreclosure

A lender's exposure to environmental liability increases significantly if the lender takes title to property held as collateral. The lender should therefore exercise caution and evaluate the potential environmental costs and liabilities that might result from foreclosure.

3. THE AMERICAN BANKERS ASSOCIATION (ABA) ENVIRONMENTAL RISK PROGRAM

The ABA Environmental Risk Program includes specific implementation materials, which enable lenders to obtain information indicating potential exposure to environmental liabilities. The materials also assist the lender conform with the above FDIC guidelines. The materials comprise an example of Lender Policies and Procedures, a Lender Environmental Underwriting Worksheet, a Borrower Questionnaire, and a Loan Officer Inspection Checklist (see appendices 1-4). The ABA makes the qualification that the materials should be tailored to each bank's particular business and approach. The materials are described below:

(i) Lender Policies and Procedures establish the lender's limitations on environmental risk and describe the steps a lender must take to ensure that only appropriate risks are accepted. For example, environmental risk classifications for real property

must be supported by a credit classification of the borrower; non-recourse real estate loans secured by a mortgage on the collateral must satisfy specific loan-to-value requirements.

Policies and procedures stipulate circumstances when a structured risk assessment or phase I environmental site assessment is necessary, and also which protocols to use — ASTM E1527 or, perhaps, some other standard. They determine when disqualifying criteria for accepting real property collateral may be waived and what requirements must be met to ensure that the lender is not subject to unacceptable risk of loss or liability. Policies and procedures also determine the methods to be used for monitoring the loan and the environmental status of the collateral. Furthermore, they establish precautions for loan workouts and foreclosures.

(ii) The Lender Environmental Underwriting Worksheet can be used for an initial environmental risk analysis as required by the FDIC's guideline. It helps the lender determine the potential for environmental risk represented by a specific borrower and by specific real property collateral. The worksheet comprises the following four parts: sources of information, disqualifying criteria, underwriting criteria, and an evaluation of underwriting criteria.

A. Sources of information, which should be attached to the Lender Environmental Underwriting Worksheet, include:

- Borrower's questionnaire
- Loan officer inspection report
- Government records
- Structured Environmental Risk Assessment or
- Phase I Environmental Site Assessment
- Phase II Environmental Site Assessment
- Other

B. Disqualifying criteria are drawn from the information sources and checked against the Lender Environmental Underwriting Worksheet. Criteria that are positive or unknown because of insufficient information should disqualify the loan. For example,

air or waste emissions that require a permit might be one criterion. Absence of a permit would thus disqualify the loan.

C. Underwriting criteria will also be ascertained from the information sources. The Lender Environmental Underwriting Worksheet asks numerous questions to determine whether a structured environmental risk assessment is necessary. Questions draw out information on the previous use of the collateral and adjacent property, and on the likely presence of contamination of hazardous waste. For example, one question might be: Do the information sources show that the collateral has stained soils?

D. The evaluation of underwriting criteria is a score of the number of positive answers to questions asked within the underwriting criteria section. A low environmental risk might be accorded a score of 0 to 5 positive answers. A high environmental risk might need 15 or more positive answers.

(iii) The Borrower Questionnaire is a primary source of easily accessible information on the environmental status of the borrower's site and facilities. Questions are separated into the following categories, which may or may not be applicable: present and prior facility use, adjacent property use and ownership, underground storage tanks, polychlorinated biphenyls (PCB)s, asbestos-containing material, lead-based paint, radon, environmental compliance, multifamily residential property, wastes, raw materials and products, facility improvements, off-site disposal, reserves and insurance. The Borrower Questionnaire generally follows the structure of the Lender Environmental Underwriting Worksheet. For example, present and prior facility use corresponds with disqualifying criteria in the Lender Environmental Underwriting Worksheet.

(iv) The Loan Officer Inspection Checklist is used for on-site, visual inspections of the borrower's facilities and often requires technical training to complete. The main purpose of the checklist is to confirm the borrower's representations and to detect obvious environmental problems.

4. GEO BANK'S EIGHT ENVIRONMENTAL INDICATORS

Geo Bank operates on the basis of an explicit intention to finance companies that demonstrate a high level of environmental performance and responsibility. Whereas the majority of banks take a reactive stance by trying to detect environmental liabilities, Geo Bank actively seeks commercial value in superior environmental management capabilities. In this respect, it is similar to environmental investment funds such as Jupiter Tyndall's Ecology Fund. Geo Bank uses eight environmental indicators, each composed of sub-indicators, some of which are listed below:

1. Environmental Communication
 - Annual report
 - Environmental policy
 - Environmental report
 - Other publications
2. Integration of Environmental Management
 - Number of staff engaged
 - Environmental auditing programme
 - Employees informed about environmental issues
3. Use of Natural Resources
 - Energy savings programme
 - Material savings programme
 - Waste management programme
4. Environmental Analysis of Products
 - Amount of turnover generated by products that enhance the environment
5. Announced Commitments to Environmental Progress
 - Announced corporate environmental policy
 - Announced long-term environmental strategy (eg. 3M's Pollution Prevention Pays)
 - Endorsement of voluntary principles/charters (eg. the ICC's Charter of Sustainable Development)

6. Environmental Record
 - Waste clean-up responsibilities (eg. Superfund)
 - Regular and accidental emissions
 - Penalties/turnover ratios
 - General environmental achievements

7. Environmental Awards
 - Awards that signal society's reaction to the company's environmental efforts
 - Awards from governmental agencies and international organizations

8. Environmental Ratings and Evaluations
 - From the company's themselves
 - Independent research institutes
 - Financial institutions
 - Specialized journals and databases
 - Report from consulting companies, press agencies, magazines, etc.

Status of UNEP Statement by Banks on
The Environment and Sustainable Development

17th January 1995

1. - Algemene Spaarbank voor Nederland, The Netherlands
2. - Arab Bank, PLC, Jordan
3. - Balkanbank Ltd., Bulgaria
4. - Banesto, Banco Espagnol de Credito, Spain
5. - Banco do Estado de Sao Paulo SA, Brazil
6. - Bank Austria, Austria
7. - Bank Depozytowo-Kredytowy S.A., Poland
8. - Bank f_r Tirol und Vorarlberg Aktiengesellschaft, Austria
9. - Bank Gdanski S.A., Poland
10. - Bankhaus Carl Sp_nghler & Co. Aktiengesellschaft, Austria
11. - Bank of Baroda, India
12. - Bank of Handlowy W. Warszawie SA, Poland
13. - Bank of Ireland Group, Ireland
14. - Bank of Montreal, Canada
15. - Bank Ochrony Srodowiska, Poland
16. - Banky Fampanrosoana ny Varotra, Madagascar
17. - Bank of Philippine Islands, Philippines
18. - Bank Polska Kasa Opieki S.A., Poland
19. - Bank Przemystowo-Handlowy S.A., Poland
20. - Bank Rozwoju Eksportu S.A., Poland
21. - Banco Nacional de Angola, Angola
22. - Banco Portuges do Atlantico SA, Portugal
23. - Bank Slaski S.A., Poland
24. - Bank Bayerische Verinsbank AG, Germany
25. - Bank Zachodni S.A., Poland
26. - Budapest Bank RT., Hungary
27. - Canadian Imperial Bank of Commerce, Canada
28. - Central Hispano, Spain
29. - Commerzbank AG., Germany
30. - Community Capital Bank, U.S.A
31. - Cooperative Bank, Manchester, U.K.
32. - Creditanstalt-Bankverein, Austria
33. - Credit Suisse, Switzerland
34. - Den Danske Bank, A/S, Denmark
35. - Deutsche Bank Ag, Germany
36. - DG Bank, Germany
37. - Dresdner Bank Ag, Germany
38. - Export Bank of Africa Ltd., Kenya
39. - (The) Hong Kong and Shanghai Bank Corporation Ltd., Hong Kong
40. - Kansallis-Osake-Pankki, Finland
41. - Kenya Commercial Bank Group, Kenya
43. - Landesgirokasse Bank, Germany
44. - Landsbanki Islands, Iceland
45. - Lloyds Bank PLC, U.K.
46. - National Bank of Kuwait SAK, Kuwait
47. - National Westminster Bank PLC, U.K.
48. - Österreichische Investitionskredit Aktiengesellschaft, Austria
49. - Österreichische Kommunalkredit Aktiengesellschaft, Austria
50. - Polski Bank Kredytowy S.A., Poland
51. - Pomorski Bank Kredytowy S.A., Poland
52. - Powszechny Bank Kredytowy S.A., Poland
53. - Powszechny Bank Gospodarczy S.A. w todzi, Poland
54. - Powszechna Kasa Oszczednosci - Bank Panstwowy, Poland
55. - Republic National Bank, U.S.A.
56. - Romanian Commercial Bank SA, Romania
57. - Royal Bank of Canada, Canada
58. - (The) Royal Bank of Scotland PLC, U.K.
59. - Thai Investment and Securities Co. Ltd , Thailand.
60. - Scotia Bank (The Bank of Nova Scotia) , Canada
61. - Swiss Bank Corporation, Switzerland
62. - (The)Toronto-Dominion Bank, Canada
63. - Uganda Commercial Bank, Uganda
64. - Unibank (Denmark)
65. - Union Bank of Switzerland
66. - Westpac Banking Corporation, Australia

APPENDIX ONE

ABA EXAMPLE LENDER POLICIES AND PROCEDURES

EXAMPLE LENDER POLICIES AND PROCEDURES

ENVIRONMENTAL RISK PROGRAMME

ENVIRONMENTAL RISK PROGRAM POLICIES AND PROCEDURES

INTRODUCTION TO THE BANK'S ENVIRONMENTAL RISK PROGRAM POLICIES

A. The Bank is committed to continuous efforts to maintain the quality of our environment, in order to protect the health and safety of our employees, customers, shareholders and the general public. To fulfill this corporate policy, the Bank's guiding principles are:

Comply with applicable environmental laws and regulations in the operation of our business and the conduct of our affairs.

Participate in initiatives to manage and conserve natural resources as we operate our business, and use those resources efficiently.

Cooperate with authorities to recognize and respond to community concerns about lending-related environmental issues, and work together to develop responsible measures to respond to concerns.

Minimize the emissions and wastes generated by our facilities.

Communicate these principles to our employees to encourage an individual commitment to the goals of the bank.

B. Environmental law and regulation creates four risks to the Bank. First, the cost of cleaning up contamination may be so high that the borrower is unable to make scheduled payments on a loan. Second, the value of real estate collateral may be diminished, because of contamination, or the stigma of previous contamination. Third, the priority of the Bank's lien may be affected by cleanup cost liens or the operation

of bankruptcy law and proceedings. Finally, the Bank may be liable for cleaning up the borrower's collateral, in the event the Bank becomes a liable owner or operator of the real estate. Since contamination cleanup costs usually are unrelated to the value of the real estate, the cost of cleanup may exceed the amount of the loan or the uncontaminated value of the real estate.

1. Under the federal Comprehensive Environmental Response, Compensation and Liability Act ("*CERCLA*" or "*Superfund*"), potentially responsible parties (commonly called "*PRPs*") for cleanup costs are the current and past owners of the contaminated property, the current and past operators of business on the property, persons that disposed of hazardous substances at the property and persons that transported hazardous substances for disposal to the property selected by the transporter. *CERCLA* includes a secured creditor exemption from liability for banks and other lenders that do not participate in the management of the property. The secured creditor exemption was interpreted by the United States Environmental Protection Agency ("*USEPA*") in its Lender Liability Rule.

2. *USEPA*'s Lender Liability Rule interprets the secured creditor exemption from *CERCLA* liability to provide that a secured lender does not "participate in the management of the property" as long as the secured lender does not exercise decisionmaking control:

a. Over environmental compliance so as to take specific responsibility for hazardous substance handling or disposal practices of the borrower; or

b. Comparable to a manager of the borrower's enterprise, so as to take general, day-to-day responsibility for:

(1) environmental compliance of the borrower; or

(2) substantially all operational aspects of the enterprise of the borrower, other than environmental compliance. Bank personnel shall consult with Bank counsel about specific questions under *USEPA*'s Lender Liability Rule.

C. The requirements of the environmental risk program policy apply to all real estate-supported credits, except one-to-four family residential real property.

II STRUCTURE OF ENVIRONMENTAL RISK PROGRAM

A. The purpose of the Bank’s environmental risk program is to avoid accepting as real property collateral prohibited or disqualified real property, and to match environmental risk with acceptable credit requirements. The Bank’s environmental risk program consists of eight elements, discussed in these policies and procedures: appropriate staff training, environmental policy guidelines and procedures, an environmental risk analysis during the application process, a structured environmental risk assessment where appropriate, required loan documentation, environmental risk monitoring during the loan term, prohibitions against participation in the management of the borrower, and precautions during workout and foreclosure. These policies and procedures implement the “Guidelines for an Environmental Risk Program,” published by the Federal Deposit Insurance Corporation on February 25, 1993.

B. Typically, there are three steps to the Bank’s environmental risk program procedures for applicable loan transactions. Those steps are explained below.

1. With the loan application, the borrower is provided the “Borrower Environmental Questionnaire,” which shall be submitted with the completed application.

2. In the event that the application or questionnaire indicates that a structured environmental risk assessment or a phase I environmental site assessment is necessary, the loan officer shall advise the borrower of that requirement. In the event that an environmental risk assessment is not necessary, typically the loan officer shall visit the proposed collateral and complete the Loan Officer Inspection Checklist. The loan officer shall complete the Loan Officer Inspection Checklist for

each real property parcel.

3. The completed Questionnaire, Inspection Checklist and Risk Assessment Report, if any, shall be submitted to underwriting for review. The underwriter shall complete the “Environmental Underwriting Worksheet” and return the completed worksheet, along with the information source documents, to the loan officer. The loan officer shall submit the environmental risk program package documents to the credit officer for review during the credit acceptance determination.

III ACCEPTANCE OF REAL PROPERTY COLLATERAL FOR REAL ESTATE-SUPPORTED LOANS

A. In order to accept real property collateral for real estate-supported loans, the following criteria must be satisfied.

1. The procedures of the environmental risk program must be completed, and an underwriting worksheet prepared for each real property parcel.

2. The real property shall not be prohibited collateral or disqualified collateral. In the event that the underwriter has waived a disqualification criterion, that disqualification must be adequately supported.

3. The risk classification for the real property must be supported by the credit classification of the borrower. Those requirements are:

Environmental Risk Classification	Credit Criteria [Institution specific]
Multifamily Properties	
Low	
Medium	
High	
Commercial	
Low	
Medium	
High	

Industrial & Manufacturing

- Low
- Medium
- High

4. The environmental risk classification for non-recourse real estate loans secured by mortgage on the collateral must satisfy the following loan-to-value requirements.

Environmental Risk Classification	Loan-to-Value Limitation
--------------------------------------	-----------------------------

Multifamily Residential

- Low
- Medium
- High

Commercial

- Low
- Medium
- High

Industrial & Manufacturing

- Low
- Medium
- High

5. Each credit agreement and mortgage instrument for real property-supported credits must include provisions that require the borrower to:

Comply with environmental laws;

Disclose information about the environmental status of real property collateral;

Grant the Bank the right to inspect the collateral for environmental concerns;

Give the Bank the right to call the loan, refuse to extend funds under a line of credit, or foreclose if contamination is discovered on the real property collateral; and Indemnify the bank for environmental liability, from the borrower or appropriate guarantors. The Bank's form loan document provisions are attached to these policies and procedures as an appendix.

6. A structured environmental risk assessment or phase I environmental site assessment is necessary for all industrial and manufacturing real property proposed as collateral for a real estate-supported loan. An assessment may also be necessary if the collateral or adjacent property is used as or has been used as one of the property uses listed at III (1) of the underwriting worksheet.

B. A structured environmental risk assessment or a phase I environmental site assessment is a detailed structured investigation by a qualified individual which typically includes surveying past ownership and uses of the collateral, inspecting the site and contiguous parcels of the collateral, reviewing the borrower's records for past use or disposal of hazardous materials, a review of public records to determine whether the borrower has been cited for violations concerning environmental laws, and a review of federal and state lists identifying real property with significant environmental contamination.

1. The "Guidelines for an Environmental Risk Program" published by the Federal Deposit Insurance Corporation on February 25, 1993, refer to a structured environmental risk assessment. In explaining its guidelines, the FDIC has stated that the requirement for a structured environmental risk assessment is satisfied by a phase I environmental site assessment. For the purpose of these policies and procedures, a structured environmental risk assessment means the same thing as a phase I environmental site assessment.

2. Structured environmental risk assessments or phase I environmental site assessments submitted to satisfy the environmental risk program policy criteria must satisfy the following criteria.

a. The assessment report must be prepared by an acceptable environmental professional. Environmental professionals whose work is currently accepted by the Bank are listed on an appendix to these policies. In the event an environmental professional has not been reviewed for acceptability by the Bank, the

environmental professional must submit an appropriate statement of qualification describing the environmental professional's training, experience and insurance coverage.

b. The environmental professional must state in writing that the Bank can rely upon the submitted assessment report.

c. The assessment must be performed in accordance with one of the following protocols:

(1) ASTM E1527, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process;

(2) National Ground Water Association, Guidance to Environmental Site Assessment;

(3) BNA's Environmental Due Diligence Guide, §211.4 Phase I Environmental Site Assessment; and

(4) BNA's Environmental Due Diligence Guide, §211.11 Phase I Environmental Site Assessment.

C. A disqualifying criterion for accepting real property as collateral may be waived where the Bank is not subject to an unacceptable risk of loss or risk of liability. Requirements for waiving disqualifying criteria are set forth below. The underwriter should explain a waiver of a disqualifying criterion on an attachment to the Underwriting Worksheet.

1. An unacceptable present use of the collateral as a landfill or waste dump shall not be waived; the Bank will not accept landfills or waste dumps as collateral. Prior use of the proposed collateral as a landfill or waste dump or significant collateral contamination may be waived as disqualifying criteria where the borrower satisfies the following requirements:

(a) Appropriate soil and groundwater sampling and contaminant analysis is performed to determine the nature and extent of any contamination.

(b) The cost of cleaning up the contamination in accordance with applicable or relevant and appropriate requirements is estimated to a reasonable degree of engineering certainty by a state-licensed professional engineer.

(c) The estimated cost of the cleanup must be analyzed as a borrower liability. In addition, the cost of the cleanup must be subtracted from the appraised value of the real estate for the purpose of establishing collateral value.

(d) Any contamination must not be affecting groundwater which is used as drinking water. In addition, the contamination may not extend beyond the boundaries of the proposed collateral.

(e) The borrower and its counsel shall explain the legal status of the contamination (e.g. permit requirements, violation of law), demonstrating that the borrower will not be subject to material fines and penalties.

(f) The borrower shall have contracted to clean up the contamination in accordance with an acceptable plan. In the loan documents, the borrower shall covenant to complete the cleanup, the breach of which shall be an event of default.

2. Collateral contamination indications that have not been satisfactorily resolved, may be waived as a disqualifying criterion, where further investigation demonstrates that the collateral is not contaminated, or if contaminated, satisfies the waiver requirements for collateral contamination above. Further investigation may include soil and groundwater sampling and analysis for the contaminants indicated by the initial investigation.

3. Severe adjacent property contamination and current industrial proposed collateral use may be waived as disqualifying criterion, where the borrower shows that the adjacent property contamination is not due to operations on the proposed collateral.

4. Underground storage tanks, not in compliance

with regulations, may be waived as a disqualifying criterion where the borrower takes appropriate steps to comply with regulations. In addition, the borrower must perform sampling of the soils around the underground storage tanks and sample analysis for the stored product, to demonstrate that the tanks have not leaked.

5. Out-of-service underground storage tanks, and insufficient information to demonstrate the tanks have not leaked, may be waived as a disqualifying criterion, where the borrower satisfies the following requirements:

- a. The borrower removes the out-of-service underground storage tanks, where technically feasible, or closes the out-of-service underground storage tanks in place in accordance with regulations,
- b. The borrower performs soil sampling, and if appropriate, groundwater sampling and analysis for the product stored in the tank.
- c. In the event the further investigation demonstrates that the tanks have leaked, the borrower must satisfy the requirements for contaminated collateral above.

6. Equipment contaminated with polychlorinated biphenyls owned by the borrower and located inside buildings may be waived as a disqualifying criterion by the removal of the polychlorinated biphenyls from the equipment. In addition, the borrower must show that polychlorinated biphenyl liquid did not leak from the equipment.

7. Asbestos-containing material (“ACM”) that is friable or not controlled by an acceptable operations and maintenance program may be waived as a disqualifying criterion where the borrower satisfies the following requirements:

- a. The borrower may remove the ACM in accordance with regulations, and demonstrate through air sampling that the proposed collateral is clear of airborne asbestos fibers.

- b. In the alternative to removing ACM, the borrower may perform an asbestos survey and implement an acceptable operations and maintenance program to maintain the asbestos in place. The asbestos survey, testing and abatement action programs must comply with U.S. EPA, “Guidance for Controlling Asbestos-Containing Materials in Buildings” (1985). The operations and maintenance program must comply with U.S. EPA, “Managing Asbestos in Place: A Building’s Owners Guide to Operations and Maintenance Programs for Asbestos-Containing Materials” (July 1990).

- c. The borrower shall comply with applicable tenant and employee disclosure or right-to-know requirements for ACM that is left in place.

8. Accessible lead-based paint in multifamily residential property may be waived as a disqualifying criterion where the borrower removes the lead-based paint, or prepares and implements an acceptable operations and maintenance program.

9. Known elevated radon levels in multifamily residential property that is not mitigated may be waived as a disqualifying criterion, where the borrower implements acceptable radon gas mitigation measures in accordance with current U.S. EPA standards.

10. Significant unresolved environmental violations for industrial or manufacturing collateral may be waived as a disqualifying criterion, where the borrower satisfies the following requirements:

- a. The borrower shall submit a good faith estimate of the fines or penalties which will be paid because of the violations. The cost estimate shall be analyzed as a borrower liability.
- b. The borrower shall submit its plans for minimizing the number of new environmental violations. The cost of implementing the plan shall be analyzed as a borrower liability.

11. Unpermitted air emissions or waste water discharges which require a permit, or ongoing permit exceedances, may be waived as disqualifying criteria, where the borrower satisfies the following requirements:

a. For unpermitted air emissions or waste water discharges, the borrower submits a complete permit application. In the loan documents, the borrower shall covenant to obtain the permit.

b. For ongoing permit exceedances, the borrower shall describe its plans to stop permit exceedances. The cost of stopping permit limitation exceedances shall be analyzed as a borrower liability.

D. During the term of the loan, the loan officer must monitor the environmental status of the borrower and the real property. Monitoring shall be performed through receipt of notices required by the loan documents, collateral inspections, and periodic environmental status updates, if necessary.

1. The loan document shall require the borrower to covenant that, during the term of the loan, the borrower shall provide copies of any notices received or given by the borrower for environmental law or regulation violations, releases of petroleum or hazardous substances and claims by persons for injury or property damage for environmental contamination or releases. In the event the loan officer receives a notice, the loan officer shall consult with the legal department and risk management office.

2. The loan document shall provide that the Bank can gather information about the environmental status of the borrower or the real property collateral through inspections of the collateral. In the event that the loan officer becomes aware of information which would disqualify the real property as collateral, the loan officer shall consult with the legal department and risk management office about requiring an inspection.

3. Periodic updates by the borrower about the

environmental status of the real property may be necessary in order to waive a disqualifying criterion, allow a high risk classification real property to be accepted as collateral or as shall be determined by the loan officer or credit officer. The information required in the periodic update shall be determined on a case-by-case basis.

VI WORKOUT AND FORECLOSURE

A. During a loan workout or foreclosure, the Bank's contacts with the borrower and the decision to foreclose upon real property may increase the risk of environmental liability. Special precautions are appropriate to ensure that the Bank minimizes any risk of loss and risk of environmental liability. During workout and foreclosure, the loan officer shall work closely with the legal department and risk management office to minimize risk of loss or liability. USEPA's Lender Liability Rule protects secured lenders against Superfund liability. Lenders who do not "participate in the management of the property" shall not be liable for cleanup costs. Loan officers shall take appropriate steps to maximize the Bank's ability to be protected by USEPA's Lender Liability Rule.

B. As appropriate, the Bank enters into workout activities with troubled credits. During the course of a workout, the Bank shall expect the borrower to continue to comply with environmental law and regulation. During a workout, the loan officer shall work closely with the legal department and risk management office to minimize the risk of loss and liability.

C. Prior to foreclosing on real property collateral, the loan officer shall evaluate the potential environmental costs and the potential for environmental liability in conjunction with an assessment of the value of the collateral as part of the decision to take title to the property by foreclosure or other means. Prior to foreclosing, the following requirements must be satisfied.

1. A structured environmental risk assessment of the real property must be performed by an

environmental professional. The report of the assessment must demonstrate that there is not existing or potential significant collateral contamination.

3. In the event potential or existing significant collateral contamination is indicated, the loan officer must work closely with the legal department and risk management office to assess the cost of the contamination in conjunction with the value of the collateral.

V. PROGRAM ADMINISTRATION

A. The Bank's environmental risk program shall be managed by the vice president whose responsibilities include risk management. The vice president shall be responsible for:

1. Review and maintenance of policies as prudent policies for the Bank's environmental risk program;
2. Waiver of disqualifying criteria during the underwriting process, which authority may be delegated to the underwriters;
3. Review and revision of the acceptable structured environmental risk assessment or phase I environmental site assessment permitted protocols, and acceptable environmental professionals; and
4. Appropriate staff training.

B. The Bank's staff shall have training sufficient to ensure that the environmental risk program is implemented and followed. Such training shall include:

1. Each loan officer shall receive the following training:
 - a. An orientation program for the Bank's environmental risk program;
 - b. A training program for completion of the Loan Officer Inspection Checklist; and

c. Yearly refresher presentations on the Bank's environmental risk program.

2. The underwriting staff shall receive the following training:

- a. An orientation program for the Bank's environmental risk program;
- b. Training to complete the Underwriting Worksheet using the Bank's information sources;
- c. Training for reviewing phase I environmental site assessments and phase II sampling and analysis data; and
- d. Semi-annual refresher courses on the Bank's environmental risk program.

3. Other Bank staff shall receive training as is determined by the senior officer managing the Bank's environmental risk program.

APPENDIX TWO

ABA LENDER ENVIRONMENTAL UNDERWRITING WORKSHEET

**LENDER ENVIRONMENTAL UNDERWRITING
WORKSHEET**

Borrower: _____
 Loan Number: _____
 Underwriter: _____
 Loan Officer: _____
 Date: _____

Instructions: This worksheet is used to underwrite the environmental risks from a loan secured by real property collateral.

INFORMATION SOURCES

Instructions: Mark which sources were used to complete this worksheet. Attach copies of source documents.

- _____ Borrower’s Questionnaire
- _____ Loan Officer Inspection Report
- _____ Government Records
- _____ Structured Environmental Risk Assessment or Phase I Environmental Site Assessment
- _____ Phase II Environmental Site Assessment
- _____ Other, describe

DISQUALIFYING CRITERIA

Instructions: Review the information sources for the disqualifying criteria. Mark any criteria that are affirmative or unknown because of insufficient information. The presence of a qualifying criterion or the absence of sufficient information to answer the question, means collateral is disqualified. In the event the collateral is disqualified, return the worksheet and information sources to the loan officer. The underwriter should explain a waiver of a qualifying criterion on an attachment.

- _____ Unacceptable present or prior collateral use
- _____ _____ Landfills or waste dumps
- _____ _____ Other, list:
- _____ Significant collateral contamination
- _____ Collateral contamination indications that have not been satisfactorily resolved
- _____ Severe adjacent property contamination and current industrial collateral use
- _____ Underground storage tanks, not in compliance with regulations
- _____ Out-of-service underground storage tanks, and insufficient information demonstrating no leak
- _____ Equipment contaminated with polychlorinated byphynels (“PCB”) owned by the borrower and located inside buildings
- _____ Asbestos-containing material that is friable or not controlled by an acceptable operations and maintenance program
- _____ Accessible lead-based paint in multifamily residential property
- _____ Known elevated radon levels in multifamily residential property that is not mitigated
- _____ Significant unresolved environmental violations for industrial or manufacturing collateral
- _____ Unpermitted air emissions or wastewater discharges which require a permit, or ongoing permit limitation exceedances.

III. UNDERWRITING CRITERIA

Instructions: Review the information sources for the underwriting criteria. Answer the questions by marking the worksheet for affirmative answers. In the event any of the subparts of question one is marked affirmative, a structured environmental risk assessment of the collateral is necessary. Also, an affirmative answer to any question may be a collateral contamination indication that must be resolved to avoid disqualification.

1. Do the information sources indicate the collateral or adjacent property is used as or has been used as a:

- _____ Chemical and petroleum production or refining?
- _____ Dry cleaner?
- _____ Electrical generation?
- _____ Embalming?
- _____ Foundry?
- _____ Ink production and formulation?
- _____ Landfill, junkyard or waste disposal?
- _____ Manufacturing facility, using chemicals other than in consumer packages?
- _____ Mining?
- _____ Paint and lacquer production?
- _____ Paper mill?
- _____ Pesticide and fertilizer production and formulation?
- _____ Pharmaceutical production?
- _____ Photograph developing laboratory?
- _____ Plating and galvanizing production?
- _____ Printing?
- _____ Railroad yard?
- _____ Recycling facilities (e.g., solvents, batteries, used oil)?
- _____ Rubber and rubber product production?
- _____ Service station?
- _____ Shipyard and shipping port?
- _____ Tannery?
- _____ Vehicle repair?
- _____ Waste management?
- _____ Wood preservation?

2. Do the information sources indicate the collateral has:

- _____ Stained soils?
- _____ Lagoons, ponds or surface impoundments?
- _____ Underground storage tanks that comply with regulations?
- _____ Industrial chemicals in other than consumer quantities (e.g. 55 gallon drums)?
- _____ Waste piles, construction debris or poor housekeeping?
- _____ Contaminated fill dirt?
- _____ Denuded or stressed vegetation?

3. For asbestos containing building material:

- _____ Is it present at the collateral, or if don's know, was the building constructed before 1979?
- _____ If present, the facility does not have an acceptable operations and maintenance program?

4. Is there polychlorinated biphenyls-containing equipment on the collateral that is:

- _____ Utility-owned PCB-contaminated electrical equipment?
- _____ Utility-owned unlabeled transformers or capacitors?

5. Do the information sources indicate for the collateral:

- _____ Threatened, pending or resolved lawsuits or administrative proceedings for contamination?
- _____ Violations of environmental law and regulation?
- _____ Governmental liens for environmental costs?
- _____ Prior environmental investigations recommending further inquiry?
- _____ Notifications or reports to governmental agencies of spills or releases?

6. For multifamily residential property, is there:

- _____ Regional information showing elevated radon levels?
- _____ Lead-based paint that is not accessible or has been mitigated, or if don's know, was the building constructed before 1979?
- _____ Urea formaldehyde foam insulation?
- _____ Public drinking water supply that exceeds EPA lead concentration level limits?
- _____ Private water supply or septic sewage system?

_____ Indications of mishandling of pesticides, herbicides, rodenticides, fertilizers, paints, solvents, maintenance chemicals, and swimming pool cleaners?

7. For commercial facilities, is there:

_____ Indications of mishandling of pesticides, herbicides, rodenticides, fertilizers, paints, solvents, and maintenance chemicals?

_____ Parking lot runoff to a detention basin?

_____ Above-ground storage tanks?

8. For industrial and manufacturing facilities, is there:

_____ Wastewater discharges to surface waters that require a permit?

_____ Air emissions that require a permit?

_____ Air emissions of hazardous air pollutants or air toxics?

_____ Hazardous waste generation?

_____ Hazardous waste generation as a large quantity generator?

_____ Community right-to-know reporting for presence of chemicals and releases?

_____ Production of products regulated by the Toxic Substances Control Act?

_____ Production of products regulated by the Federal Insecticide, Fungicide and Rodenticide Act?

_____ Production of drug products regulated by the Federal Food, Drug and Cosmetic Act?

_____ Production of products which must be shipped with a Material Safety Data Sheet?

_____ Above-ground storage tanks that require a spill prevention control and countermeasures plan?

_____ Floor drains open to soil or discharging to surface water?

_____ Private groundwater wells near the collateral supplying drinking water?

_____ Violations of the Occupational Safety and Health Act during the past year?

IV. EVALUATION OF UNDERWRITING CRITERIA

Instructions: Add up the marks. Mark the appropriate risk characterization.

1. Multifamily

_____ Low (0 to 3)

_____ Medium (4 to 7)

_____ High (8 to 47)

2. Commercial

_____ Low (0 to 5)

_____ Medium (6 to 10)

_____ High (10 to 44)

3. Industrial and Manufacturing

_____ Low (0 to 6)

_____ Medium (7 to 13)

_____ High (14 to 53)

APPENDIX THREE

ABA BORROWER QUESTIONNAIRE

BORROWER QUESTIONNAIRE

Borrower: _____

Preparer: _____

Instructions: Please answer this questionnaire on a separate sheet, numbering your answers to correspond with the questions. In the event that the question does not apply to your facility, please answer "not applicable". In the event you do not know the answer to the question and cannot find the answer through reasonable diligence, please respond "don't know". The term "facility" includes the property, improvements and equipment, although only the real property and improvements may be proposed collateral..

GENERAL INFORMATION

1. Name and address of borrower.
2. Address of the facility, including county, and telephone number.
3. Facility standard industrial classification code.
4. Please provide a copy of a map of the facility and adjacent property. In the event a map is not available, please prepare a hand-drawn, not-to-scale map of the facility and adjacent property, indicating north, adjacent property owners and natural surface features.
5. If available, please provide copies of topographic maps, historical maps and aerial photographs of the facility.
6. Please provide a copy of any reports or results of:
 - a. Environmental assessments or audits;
 - b. Regulatory inspections;
 - c. Soil, air or water sampling;
 - d. Inspections or testing of underground storage tanks;
 - e. Endangered species assessments or studies; or
 - f. Environmental impact statements.

PRESENT AND PRIOR FACILITY USE

7. Please describe the current use of an operations at the facility.

8. Please describe the use of an operations at the facility, to the borrower's knowledge, for the past sixty (60) years.

9. Have any notifications been given to a governmental agency for a spill or release of petroleum or hazardous substances? Describe the notifications and the spill or release.

10. Is the soil or groundwater at the facility contaminated by petroleum or hazardous substances? If so, was the source of the contamination prior or current operations at the facility?

11. Since the current operations began at the facility, has the facility had:

Stained soils?

Unlined lagoons, ponds or surface impoundments?

Waste piles, construction debris or improper waste accumulation?

Contaminated fill dirt?

Denuded or stressed vegetation?

Industrial chemicals stored in leading 55 gallon drums?

12. Did the borrower cleanup any contaminated soils or groundwater at the facility?

13. To the borrower's knowledge, did any past owner or operator of the facility cleanup contaminated soil or groundwater?

14. Has the borrower received any inquiries, complaints, claims, orders or lawsuits about contamination at the facility?

ADJACENT PROPERTY USE AND OWNERSHIP

15. Who are the current owners or operators of the property adjacent to the facility, and what are the current operations performed at that property?

16. To the borrower's knowledge, is there any soil or groundwater contamination on the adjacent properties?

17. To the borrower's knowledge, where is:

(a) The nearest U.S. EPA National Priorities List or State Priorities List site?

(b) The nearest active landfill or land disposal site?

(c) The nearest inactive or closed landfill or land disposal site?

18. In the area of the facility, is drinking water provided by private wells or a public central water system?

19. To the borrower's knowledge, is drinking water in the area of the facility affected by contamination?

UNDERGROUND STORAGE TANKS

20. Does the facility have underground storage tanks? If so, are the underground storage tanks currently in compliance with applicable law and regulations, including release detection requirements? Please provide a copy of the tank notification or registration form which was submitted to the appropriate governmental agency.

21. Since the notification or registration form was submitted, have there been any changes in use of the underground storage tanks? If so, please describe the changes in use.

22. Are there currently any out-of-service underground storage tanks at the facility? If so, please describe:

(a) Size of the tank and type of petroleum stored in the tank;

(b) The date the tank was taken out-of-service; and

(c) Any investigation for tank leaks.

23. Did the borrower remove any underground storage tanks from the facility? If so, where the tanks closed in accordance with applicable law and regulation? Describe any investigation for tank leaks.

24. To the borrower's knowledge, did past owners or operators of the facility remove any underground

storage tanks? If so, describe any investigations for or indications of tank leaks.

POLYCHLORINATED BIPHENYLS

25. Does any equipment at the facility contain polychlorinated biphenyls ("PCBs")? If so, please describe:

(a) Type of equipment and quantity of PCB material;

(b) Owner of the equipment (e.g., utility or borrower);

(c) Whether the equipment is inside the building or near an air intake duct;

(d) Whether there have been any leaks from the equipment;

(e) Whether the equipment is properly labeled; and

(f) Whether inspections and monitoring of the equipment has been performed.

ASBESTOS-CONTAINING MATERIAL

26. Is asbestos-containing material ("ACM") present in any buildings at the facility? If so, has the borrower implemented an operations and maintenance program that was prepared consistent with U.S. EPA, "Managing Asbestos in Place: A Guide to Operations and Maintenance Programs for Asbestos-Containing Materials" (July 1990)?

27. If the answer to question 25 is "don't know," were any buildings constructed at the facility before 1979?

LEAD-BASED PAINT

28. For multifamily residential property, is there lead-based paint which is accessible to residents? If so, has the borrower implemented an operations and maintenance program?

29. If the answer to question 27 is "don't know", was the building constructed before 1979?

RADON

30. For multifamily residential property, are there known elevated radon levels in any of the units? If so, has the borrower implemented an operations and

maintenance program prepared consistent with current U.S. EPA guidelines?

31. If the answer to question 29 is "don't know," is the multifamily residential property located in an area of known regional elevated radon levels?

32. Have public drinking water supplies in the area of the facility been found to contain radon or radium?

ENVIRONMENTAL COMPLIANCE

33. Have there been or are there threatened, pending or resolved lawsuits or administrative proceedings for contamination at or from the facility? If so, please describe.

34. Has the facility received any citations or notices of violation for violation environmental law or regulation? If so, please describe.

35. Are there unpermitted air emissions or waste water discharges which require permit?

36. Are there permitted air emissions or waste water discharges for which there are ongoing permit exceedances?

37. Have any governmental liens for environmental costs been filed or recorded against the facility?

38. Have any prior environmental investigations by consultants or governmental agencies recommended further inquiry?

MULTIFAMILY RESIDENTIAL PROPERTY

39. For multifamily residential property, is there urea formaldehyde form insulation? If so, is there an appropriate operations and maintenance program for the insulation?

40. Does the public drinking water purveyor report drinking water lead concentration levels that exceed EPA limits?

41. Does the multifamily residential property have a

private well water supply or septic sewage system?

42. Have proper handling and disposal practices been used for pesticides, herbicides, rodenticides, fertilizers, paints, solvents, maintenance chemicals and swimming pool cleaners?

WASTES

43. Does the stormwater runoff from the parking lot discharge to a detention basin or to a waste water outfall?

44. If the facility has air emissions that require a permit, does the facility emit hazardous air pollutants or air toxics? Please attach a copy of the air emissions permit.

45. Does the facility generate regulated hazardous waste? If so, is the facility classified as a "large quantity generator?"

RAW MATERIALS AND PRODUCTS

46. Is the facility required under state or federal law to make community right-to-know reporting for the presence or release of chemicals or wastes? If so, please attach the facility's most recent Tier I Report and Toxic Release Inventory Report.

47. Does the facility produce products that are:
(a) Regulated by the Toxic Substances Control Act?

(b) Regulated by the Federal Insecticide, Fungicides and Rodenticide Act?

(c) Regulated as a drug product by the Federal Food, Drug, and Cosmetic Act?

(d) Shipped with a Material Safety Data Sheet?

FACILITY IMPROVEMENTS

48. Does the facility have aboveground storage tanks that require a spill prevention control and countermeasures plan?

49. Does the facility have floor drains open to soil for discharging to surface water?

50. Are there private groundwater wells near the facility supplying drinking water?

OFF-SITE DISPOSAL

51. Has the borrower received notice that it is or may be a potentially responsible person for response costs, including costs of removal or remedial action under Superfund, at any off-site disposal sites? If so, please describe the borrower's allocation of liability, or the volume and toxicity of the waste disposed of at that site.

52. Is the borrower aware of any known ongoing environmental investigation by federal, state or local governmental agency of any neighbouring property?

RESERVES AND INSURANCE

53. Has the borrower established any reserves for environmental cleanup or compliance costs? If so, please describe.

54. Has the borrower made claim against any insurance policies for environmental cleanup costs? If so, please describe.

I understand this information will be relied upon by lender in making its decision to approve borrower's loan application. All answers are true and correct, and I have not failed to include information which would otherwise by its omission make the answers provided misleading.

Signature of Borrower's Officer

APPENDIX FOUR

ABA LOAN OFFICER INSPECTION CHECKLIST

LOAN OFFICER INSPECTION CHECKLIST

Loan Officer: _____

1.0 BUSINESS AND PROPERTY INFORMATION

1.1 Borrower _____

1.2 Facility address _____

1.3 Facility contacts who answered question:

1.4 Briefly describe the facility _____

a. Size of property (acres) _____

b. Size of area developed (buildings, paved)

1.5 Facility Utilities

- a. Heating (electrical, oil or gas)
- b. Process heat (electrical, oil or gas)
- c. Water (public purveyor or private well)
- d. Sanitary sewer (septic field or sewer system)

2.0 FACILITY INFORMATION

2.1 Location is urban or rural _____

2.2 Area is industrial, commercial or residential

Distance to nearest residence _____

2.3 Surface water within 500 ft _____

2.4 Groundwater information

a. Depth to ground water _____

b. Known uses of ground water _____

c. Are there any ground water wells which the facility does or can monitor? Has contamination been detected? _____

2.5 Are site maps, drawings or aerial photos available (obtain)? _____

2.6 Do neighbours or authorities complain about odours, discharges or noise from the facility?

2.7 a. Does stormwater runoff from the facility flow onto or into

1) adjacent property? _____

2) surface water? _____

3) storm drainage systems?

b. Does runoff from neighbouring properties flow onto facility? _____

2.8 PCB Information

a. Is any PCB electrical equipment located at the facility (transformers, capacitors, fluorescent light ballast)? _____

b. Did the PCB equipment ever leak? _____

c. Is any of the PCB equipment inside a building?

Identify the building and its use _____

d. Is the PCB equipment marked, well maintained and secure? _____

e. Have there been any fires involving PCB equipment? _____

2.9 Building Information

a. Number of buildings

b. Square footage

c. Age of buildings

d. Construction of buildings _____

e. Do any buildings have asbestos insulation or construction materials? If so, has the facility implemented an operations and maintenance program for the asbestos?

f. Do any buildings have urea formaldehyde foam insulation? If so, has the facility implemented an operations and maintenance program for the insulation?

g. For multifamily residential buildings, do any of the buildings have peeling lead paint within five feet of floor?

2.10 Environmental, Health and Safety

a. For industrial and manufacturing facilities, does the facility have an industrial hygiene program?

b. Does the facility use or manufacture OSHA hazardous substances (e.g. lead)? If so, what quantities are stored at the facility?

c. Does the facility have a Hazardous Communication Program (e.g., Employee or Community Right-to-Know)?

d. List all notices, violations and fines against the facility for alleged environmental, health and safety violations. Ask for any documentation

e. Has the facility spilled or released a reportable quantity or non-diminus amount of petroleum or hazardous substances? Ask whether it was reported

f. Are there any waste disposal areas on the premises? Describe the appearance of the facility's housekeeping practices (good, fair or poor)

g. Ask whether the facility is currently in compliance with all environmental permits.

2.11 Radon, for multifamily facilities

a. Ask whether there is any concern in the area about elevated levels of radon

b. Has the facility performed any test for radon on site or in the building? If so, what were the results?

c. Is the facility located on or near sites which were used for phosphate extraction or uranium, thorium or radium processing?

3.0 HANDLING AND STORAGE OF RAW MATERIALS AND PRODUCTS

3.1 List in Table 1 the hazardous substances and petroleum used at the facility.

3.2 Tank Information

a. Inventory aboveground or underground tanks in Table 2

b. Underground tanks

1) Have underground tanks been leak tested?

2) Did test indicate leaks

3) Are underground tanks' contents routinely inventoried?

4) Has inventory analysis indicated material loss?

5) Do underground storage tanks have release detection?

c. Removed underground tanks

1) Have any underground tanks been removed?

2) Do available documents show the tanks did not leak?

3.3 Is there containment for the aboveground storage tanks?

Does the facility have a spill prevention control and countermeasures plan?

3.4 Describe any indication of environmental contamination observed:

a. Stained soils _____

b. Denuded or stressed vegetation _____

c. Waste piles _____

d. Poorly maintained drum storage area _____

e. Lagoons, ponds and surface impoundments

f. Construction debris or discarded materials

3.5 Describe any spills or releases of hazardous substances

a. Material released _____

b. Amount _____

c. Notification made _____

d. Cleanup efforts _____

4.0 HAZARDOUS WASTE STREAMS

4.1 Inventory hazardous waste streams on Table 3.

4.2 Has the facility filed a Part A or Part B RCRA application?

5.0 WASTE WATER DISCHARGES

5.1 Does the facility discharge waste water? _____

5.2 Provide permit information on discharges:

a. Surface water _____ NPDES # _____
Expiration Date _____

b. Municipal sewer _____ Permit # _____
Expiration Date _____

c. Ask whether there were any exceedances reported on the discharge monitoring reports during the past two years _____

5.3 Is waste water stored in a pond, pit or lagoon?

a. Size and depth of lagoon _____

b. Does lagoon have a clay liner? _____

c. Sludge disposal method _____

5.4 Are there any floor drains or catch basins in facility that could discharge spills, leaks or process water from storage or process areas?

5.5 How is runoff from roofs, parking lots and outdoor facility storage or process areas discharged (municipal sewer, storm drain, surface water or storage basin)?

5.6 Does the facility utilize a septic or drain system or a leach field?

7.3 Does the adjacent property impact this facility through odours, noise, stormwater runoff or contamination?

7.4 Is any of the adjacent property used for petroleum storage or delivery?

7.5 Is any of the adjacent property used for chemical manufacturing?

6.0 AIR EMISSIONS

6.1 Does the facility have permitted air emissions? If so, how many?

6.2 Does the facility have any air emissions which are unpermitted or had permits which are expired?

6.3 Has the facility exceeded its air permit limitations? If so, how many days?

7.0 ADJACENT PROPERTY INFORMATION

7.1 Names of current adjacent property owners or operators, and current property use.

East

West

North

South

7.2 Ask about previous uses of the adjacent property _____

TABLE 1 HAZARDOUS MATERIALS

Trade Name	Chemical Name	Hazard	Quantities Stored at facility	Container
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TABLE 2 TANK AND CONTAINER INFORMATION

Above Ground or Underground Tank	Volume	Construction (e.g., Steel, Fiberglass)	Hazardous Material stored	Age
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TABLE 3 HAZARDOUS WASTE STREAM

Waste Name	Volume Generated Each Month	EPA Hazardous Waste Number	Disposal Method
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