

THE
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CHARTERED
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OF SCOTLAND



THE VALUATION OF
ASSETS AND
LIABILITIES:
Environmental Law and
the Impact of the
Environmental Agenda
for Business

Rob Gray
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FOREWORD

In inviting Professor Gray and colleagues to undertake this project the Research Committee was aware of the growing importance of environmental issues and their potential effect on the performance and state of companies as reported in their financial statements. The project was planned to assess the extent of any mismatch between current accounting practice and the present and future reporting of environmental issues.

The research team has produced a provocative and challenging report which will be of interest to all those whose balance sheet is vulnerable to environmental pressures. The researchers have identified practices in leading edge companies and warned against a short sighted perspective in others. They offer recommendations to the accountancy profession and business managers in the UK. The Research Committee commends this publication as a constructive contribution to a debate which will clearly run for some time.

Professor John Baillie
Convener
Research Committee

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There were other individuals and organisations which helped us enormously. Our very special thanks go to Ron McDonald of NCR, Rick Clark of KPMG and, most particularly, the Institute of Environmental Management who circulated the environmental managers' questionnaire for us. In addition, we owe a great debt to those who provided research and secretarial assistance for different elements of the project: Alison Anderson; Hazel Batchelor; Olwen Duncan; Sue Gray; Javad Mohamed; Audrey O'Para; and Rebecca Thompson.

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EXECUTIVE SUMMARY

Introduction

There is an increasing amount of evidence suggesting that environmental issues potentially have a major impact on the numbers reported in financial statements. Yet, with very few exceptions, UK financial statements do not currently make explicit reference to environmental issues. Would it be realistic for a reader of UK financial statements to believe that environmental issues were of little economic concern to UK businesses?

This research has assessed the extent to which financial statements are, and should be, reflecting environmental issues. Having identified a gap between current practice within financial statements and the pressures arising from the environmental agenda, the project explored why this gap existed, how it had arisen and what, if anything, the UK accounting profession ought to do about it.

Background

The report indicates the considerable extent of the potential understatement of environmental liabilities in US company accounts. The potential environmental liabilities are a far from trivial matter in North America. Their importance would appear to be growing in European companies, prompted by a steady growth in environmentally related legislation. Some companies are developing a strategy to respond to this particularly through the introduction of sophisticated environmental management systems. Management accounting, in particular, has a crucial role to play here. More visible has been the increasingly wide ranging, sophisticated and detailed response from the professional accounting bodies in the UK, Europe and North America. There is a high level of emerging

consensus among the professional bodies on the way in which financial statements, the annual report and auditing practices should begin to reflect environmental matters.

There are indications that accountants in practice have been slow to respond and little inclined to take important initiatives in response to this growing environmental agenda. The three empirical elements of the research set out to explore what this might mean.

Empirical studies

Analysis of the annual reports of large Scottish companies found that less than 5% of these companies are noting the financial implications of the environmental agenda in their financial statements. If environmental issues are potentially significant, why are we witnessing this apparent inertia?

An extensive range of interviews with accountants, environmental managers and others in key positions in a range of UK businesses evoked complex responses. Pressures on businesses, ranging from legislation, through attitudes of the 'green consumer' and 'green employee', to issues such as the development of environmental management systems and supply chain innovations, all appear to affect organisations very differently. The legal situation facing businesses is not clear and this is exacerbated by an apparently inconsistent environmental regulatory regime. The differences between organisations seem not to be explicable by reference to industry sector but seem to be more dependent upon: the location of the plant; the processes employed by the company; and the organisational culture.

It was apparent that there was a small group of 'leading edge' companies which were carefully monitoring environmental developments and were, as a matter of policy, seeking to respond in advance of anticipated developments in the environmental agenda. Such companies were engaged in active strategies for the future, ensured that accountants and environmental managers were communicating regularly and took active steps to involve the financial auditors in the assessment of potential environmental risks. The majority of companies, however, seemed content

to play a more passive and reactive role, taking any initiative only when faced with an unanticipated economic shock arising from developments in the environmental agenda.

Evidence of an active response by accountants was confined to 'leading edge' companies. Such a response tended to be indicated by formal assessment of risks and liabilities, active provisioning and separate identification of environmental costs in the chart of accounts. The potential risks could be very significant indeed. The interviews identified three examples of going concern risks arising from environmental issues. Despite this, most accountants were not active and, indeed, seemed reluctant to be so in the absence of formal guidance from the accounting profession and regulators.

From a questionnaire survey of accountants and environmental managers it appeared that in these 'leading edge' companies, there was not a great deal of difference between the perceptions and concerns of accountants and those of environmental managers. For those companies which have taken active steps to stay ahead of the environmental agenda, our evidence suggests that they have been successful. For the bulk of companies, however, there were important differences in how significant, and potentially damaging, the accountants and the environmental managers saw the emerging environmental agenda. In our judgment, this bulk of relatively passive companies are potentially vulnerable to environmental shocks.

Conclusions

It is evident that there is a growing and material body of environmental pressures arising through law, regulatory action and customer concern, which could have a devastating effect on balance sheet values. No examples of this, except for the going concern qualification, were in fact found. We discovered no examples where asset valuation and/or impairment appeared to be an issue of significant concern. The 'leading edge' companies, as a consequence of their longer term view, were finding themselves able to respond to changes in legislation within the normal capital replacement cycles of their business. Similarly, such

companies were identifying liabilities and creating provisions but, at the present time, these were not considered to be material to the financial statements.

At least for the 'leading edge' companies, there does not yet appear to be any major mismatch between the demands of the environmental agenda and the picture reported by the financial statements. Nevertheless, accountants in these companies were aware that the environmental situation was going to become a great deal more demanding and difficult. Such accountants seemed to welcome the prospect of formal reporting guidance on environmental issues within the financial statements and annual report.

Concern must, however, remain about the apparent myopia being exhibited by the bulk of UK businesses. Whilst we have not been able to explicitly identify any unambiguously convincing evidence that many UK businesses are extremely vulnerable to the environmental agenda, we conclude that the circumstantial evidence is sufficient to make any commentator anxious about the situation.

Recommendations

It is our judgment that some definite stance must be taken by the profession in the UK in the very near future. A series of possibilities is offered which covers statements of guidance on 'best practice', digests of existing discussions on liabilities, costs and provisions to be reflected in financial statements and the need for mandatory environmental reporting. In making these recommendations we make explicit reference to the range of thoughtful initiatives which have been undertaken by the professional accounting bodies in North America and Europe. There is certainly no need to re-invent wheels for environmental accounting and reporting within the present financial accounting conventions.

The monograph concludes on a note of caution. We make the distinction between the actual state of degradation of the natural environment and the extent to which that degradation is currently influencing the business (and political) agenda. There is a major difference between the two. The business and political agendas have not yet begun

seriously to address the state of environmental crisis. It is increasingly apparent that all must do so through the concept of sustainability. Sustainability is a profoundly challenging concept which must clearly inform all public policy decisions in the coming decades. This will not be comfortable as sustainability is almost certainly incompatible with current modes of business and current methods of accounting. If the accountancy profession is to take its public interest duties seriously it must also be thinking about how accounting might best help the development of a sustainable future, as opposed to the unsustainable future which current accounting practice encourages.

GLOSSARY OF ABBREVIATIONS

ACCA:	Association of Chartered Certified Accountants
ACBE:	The Advisory Committee on Business and the Environment
AICPA:	American Institute of Certified Public Accountants
AIS:	Accounting Information System
APB:	Auditing Practices Board (UK)
ASB:	Accounting Standards Board (UK)
BATNEEC:	Best Available Techniques Not Entailing Excessive Cost (used in regulator's assessment of sites and processes)
BCSD:	Business Charter for Sustainable Development
BOD:	Biological oxygen demand (a measure of water purity)
BS7750:	British Standard related to environmental management systems.
CBI:	Confederation of British Industry
CERCLA:	Comprehensive Environmental Response Compensation and Liability Act 1980 (USA)
CFCs:	Chlorofluorocarbons
CIA:	The Chemical Industry Association
CICA:	Canadian Institute of Chartered Accountants
CIMA:	Chartered Institute of Management Accountants
CMA:	Canadian Society of Management Accountants
COD:	Chemical oxygen demand (a measure of water purity)
CSEAR:	Centre for Social and Environmental Accounting Research
EMAS:	Environmental Management and Audit Scheme (EU)
EMS:	Environmental Management System(s)
ENDS:	The journal of Environmental Data Services
EA:	Environmental Agency (UK)
ED:	Exposure Draft
EPA(UK):	Environmental Protection Act (UK)
EPA(US):	Environmental Protection Agency (USA)
FEE:	Fédération des Experts Comptables Européens
FRS:	Financial Reporting Standard
GAAP:	Generally Accepted Accounting Principles

HMPI:	Her Majesty's Industrial Pollution Inspectorate
IAPC:	International Auditing Practices Committee
IFAC:	International Federation of Accountants
ICAEW:	Institute of Chartered Accountants in England and Wales
ICAS:	Institute of Chartered Accountants of Scotland
IEM:	The Institute of Environmental Management
IISD:	International Institute for Sustainable Development (Canada)
IPC:	Integrated Pollution Control
ISO14001:	The International Standards Organization's standard on EMS
LCA:	Life Cycle Assessment/Analysis
SARA:	Superfund Amendments and Reauthorization Act 1986 (USA)
SEC:	Securities and Exchange Commission (USA)
SEPA:	The Scottish Environmental Protection Agency
SMEs:	Small and Medium Sized Enterprises
SORP:	Statement of Recommended Practice
SSAP:	Statement of Standard Accounting Practice
UN:	United Nations
UNCTAD:	United Nations Conference on Trade and Development
UNCTCISAR:	UN's Centre for Transnational Corporations (as was, now part of UNCTAD), International Standards on Accounting and Reporting
UNWCED:	UN's World Commission on Environment and Development
VOC:	Volatile Organic Compounds (a group of prohibited airborne pollutants)

CHAPTER 1

INTRODUCTION AND BACKGROUND

While the aggregate numbers concerning potential environmental costs are staggering, what is almost as frightening is the massive amount of acknowledged environmental cost that has yet to be reflected in corporate financial statements: Roberts (1993)

Roberts, a commissioner with the Securities and Exchange Commission (SEC) in the US, based this assertion on the Price Waterhouse survey (1992) which claimed that 62% of large US companies had environmental liabilities which were known to the companies but not yet recorded in their financial statements. The situation in the UK is both better and worse than in the US from the point of view of business and conventional accounting. It is better in that the UK does not currently have the environmental legislation that exists in the US or the dominantly litigious atmosphere that so militates against voluntary disclosure¹. Therefore, the existing level of environmental liability is *de facto* lower in the UK. It is worse, however, in that the level of environmental awareness in UK business remains especially low² although the range and depth of current and potential legislation, of both UK and European Union (EU) origin, is likely to have as big an impact on business as has been the case in the US³. That there is a major potential issue here for business, and thus for business accounting, seems incontrovertible. What is far from clear, however, is when and how this changing environment will affect business and what, if anything, the accountancy profession should be doing about the situation.

The situation is further clouded by apparent inconsistencies in the UK business atmosphere. The majority of UK companies, with a few notable exceptions, have neither responded strategically and financially to the environmental agenda, nor acknowledged the financial impact of

environmental issues in their annual reports and financial statements. Such apparent indifference could lead to a belief that there is really no issue of concern. In contrast, the actual and potential UK and EU legislation, the level of concern expressed by environmental managers, civil servants and others, the level of anxiety expressed by members of the financial community and the widespread commentary on the environmental implications for business, would lead to a very different conclusion. From this point of view, echoing Roberts, business faces a catastrophe of 'staggering' proportions. Yet UK companies, apparently, seem largely content to ignore the issue. Are companies fiddling whilst Rome burns? Are the environmental commentators over-reacting? Should the accountancy profession be concerned? The primary aim of this research is to address two questions:

- What impact, if any, are environmental developments having on the financial statements of UK companies?
- What impact should they be having?

The research considers both measurement and disclosure issues. The primary motivation for the research is to understand the apparent incongruence between the views of environmentalists and environmental managers and the apparent absence of any environmental manifestations within financial statements. This in turn leads to more detailed research questions:

- Where does the 'truth' of the economic effects of the environmental agenda on business actually lie; and where is it likely to lie in the foreseeable future?
- Do the environmental specialists and the accounting specialists within business have differing perceptions of the extent of the issue? If so, why?
- Why do some businesses respond and others do not?
- For those businesses which are taking account of the financial implications of the environmental agenda, how is the information flow arranged and how were decisions reached?

The focus, throughout this monograph, is on the financial statements of companies. The foregoing questions are examined in that context. Informed by the answers to these questions, the research considers various scenarios for action by the accountancy profession.

Although the research approach also has a deliberate Scottish bias it draws from international experience wherever appropriate and, in turn, is likely to have a much wider applicability beyond one country. Local conditions, particularly legal, regulatory and cultural matters, are highly likely to be specific and important. The next section reviews the background to the enquiry. Finally, this chapter sets out the structure of the report.

Background

At the outset, it is essential to distinguish three separate elements in the process by which environmental issues eventually affect organisational financial statements.

First, there is the actual state of the natural environment: the level of global warming; the decline in bio-diversity and habitat; starvation; desertification; pollution; resource use; and other similar issues. These are matters of physical fact. However they are 'facts' which are proving intensely complex to isolate and they are matters to which a natural scientist would give attention in order to try to assess, for example, ecological systems collapse or local ecological carrying capacities. For the social scientist, such matters would be addressed in attempts to understand sustainability⁴. A definition of sustainability is given in Figure 1.1. Such issues are, to date at least, generally of no direct, immediate concern to western businesses which can be assumed to be following conventional goals of growth, economic survival and profitability. We consider, from an extensive examination of the literature⁵, that current business practices and sustainability are fundamentally incompatible. However, western businesses can largely ignore the environmental issues because they have few, if any, direct effects (as yet) on (say) European experience. Starvation, desertification, ozone depletion, acid rain *etc* are,

as yet, a direct experience for only a very few businesses. Water shortages, algal bloom, climate change, however, are a few manifestations of how these issues will increasingly impinge on daily experience.

Figure 1.1 Sustainability

Sustainability refers to a nation, region, economy, or whatever whose development:

meets the needs of the present without compromising the ability of future generations to meet their own needs (UWCED, 1987 - The Brundtland Report).

Sustainability comprises both environmental protection (often referred to as 'eco-efficiency') and justice between peoples and generations ('eco-justice').

It is almost universally accepted that sustainability must be the goal of mankind but that, especially in the (so called) developed world, this goal is not being met. The dispute(s) about sustainability are primarily about the size of the gap and how that gap might be closed.

Second, we must identify those manifestations of the natural environment as they impinge upon business. These will be broadly of two sorts: instances in which, for example, environmental degradation has a direct impact on the day-to-day workings of the business, (through, for example, resource depletion or perhaps algal bloom affecting water supplies); and through human intervention that might be interpreted as a response to environmental issues. At the moment, the latter are by far the more common source of impacts on business and will manifest themselves through legal changes, customer preferences, social and employee pressures and fiscal, price and other changes in market conditions. These issues are relatively trivial from an environmental or sustainability point of view but are those to which conventional business will, and perhaps must, give attention. It is these manifestations, rather than the sustainability issues, to which this paper is addressed.

Third, we need to distinguish between actual or potential environmental agenda impacts on the business and impacts which might be expected to be reflected in the financial statements. That is, one might identify a wide range of environmentally related issues to which business should give attention⁶ but not necessarily expect to see a response in the conventional financial statements of the organisation. For example, a change in social pressure on environmental issues might encourage a company to undertake the development of an environmental management system and/or a programme of environmental reporting. Some of the potential areas we might expect to be affected are listed in figure 1.2.

Figure 1.2 Some potential financial effects of the environmental agenda

- Changes in sales due to customer preferences and product environmental performance;
 - Stock write offs of environmentally obsolete items;
 - Changes in sales due to demands from 'supply chain' audits from customers;
 - Costs of seeking environmental consents;
 - Costs of monitoring operations to ensure compliance with consents;
 - Costs of improving environmental performance;
 - Civil and criminal liability when it goes wrong;
 - Costs of cleaning up past environmental damage;
 - Increasing capital costs to comply with *eg* BATNEEC;
 - Increasing energy costs;
 - Increasing waste disposal costs;
 - Increasing waste treatment costs;
 - Changing patterns of depreciation to recognise shorter lives of BATNEEC plant;
 - Changing patterns of maintenance costs to retain efficiency and/or reduce *eg* emissions;
 - Changing relative costs structures arising from issues above, often in the costs of suppliers;
 - Costs of obtaining finance to recognise costs of increased environmental risk;
 - Impact of increasing awareness of environmental risks in the financial markets;
 - Impact of ethical investment and ethical investors;
 - Insurance costs and availability;
 - Tax and other fiscal changes.
-

Such changes in the business environment might have no financial consequences where each change is simply a shift of priorities or the financial consequences are immaterial. Alternatively, the costs might be of some significance but be bundled up in existing expenditure categories through, for example, capital investment spending, research and development expenditure or normal revenue expenditure. Only if such costs either have a material affect on the existing accounting categories or create new accounting categories is the impact of the environmental agenda likely to be, now or in the future, observable in the financial statements.

The essence of the problem we are seeking to isolate is to identify the circumstances under which the influences in our second category will produce a visible manifestation in the financial statements. The issue does not appear to be a trivial one yet there is little evidence of this in corporate financial reporting. Prior European research does not address directly the environmental impact on financial statements. Such research questions are examined more widely in the US under the influence of developments like Superfund⁷ but even that research has not explained successfully why valuation and disclosure issues are not of more explicit concern in financial accounting. However, the European research does recognise that there is growing environmental pressure on companies and an increased organisational response to the environmental agenda, most visibly through environmental reporting and environmental management systems. In contrast, prior research also observes that accountants and the financial community more generally appear to be making little or no response to these changes. It might be expected that accountants should be responding. Whilst we could speculate on why we can see this apparent conflict between expected and observed behaviour, this issue has not previously been examined formally. The prior research is re-examined in chapters 2 and 3.

Structure of the report

The research reported in this monograph is explicitly exploratory. Despite our prior work in the area we were genuinely puzzled by the apparent tension between the reported importance of environmental issues

and the apparent inaction of accountants. As a consequence, we undertook the research with no strong prior views either as to whether the reported perceptions of the environmental business situation were either accurate or generalisable or what explanations for the situation we were likely to find. Consequently, every attempt has been made to report the research in as transparent a manner as possible.

The framework for the research is based upon a simple conception that the growing environmental agenda has real economic and financial consequences for companies and that these concerns should find an expression in the financial numbers reported in the financial statements, whether or not that expression results in numbers which are disclosed separately. A summary of the areas that we might, from previous work, expect to be influenced are outlined in figure 1.3. The purpose of this research was to explore, in simple terms, what, if anything, was happening to these accounting numbers.

Figure 1.3 Financial statement categories that are likely to be influenced by the growing environmental agenda

Profit and Loss Account:

- Sales revenue;
- Raw material costs;
- Taxation and grants;
- Specific costs for clean up, effluent and emission control or reduction, waste treatment and minimisation, remediation;
- Fines, compliance/regulatory, licence and PR costs;
- Finance costs including insurance;
- Research, development and design;
- Depreciation and stock write off.

Balance Sheet:

- Land revaluation;
- Plant write offs;
- New plant;
- Stock write downs;
- Provision and liabilities *eg* remediation, fines, damages, *etc*;
- Investments, associated companies and subsidiaries;
- Increased risk on all categories.

Notes to the accounts:

- Contingent liabilities;
- Capital commitments;
- Directors' liability;
- Level of capital expenditure.

Source: Adapted from Gray et al (1993) p23.

The research begins with an extensive review of the accounting, management and legal literature from academic, professional and business writers. This review was designed to clarify the present situation and to provide a structure for our research approach.

The empirical content of the project comprises three distinct, though related, elements. First, a content analysis of current reporting by Scottish companies provides descriptive information about the level of environmental disclosure in the financial statements and the extent and form of environmental reporting within the annual report (chapter 4). Second, a range of companies was interviewed in order to obtain a relatively rich understanding about how accountants and environmental managers are thinking about the issues (chapter 5). Third, a postal questionnaire was despatched to a sample of finance directors and environmental managers from leading companies to explore further the principal themes arising from the interviews (chapter 6). The findings from the empirical research are brought together in chapter 7.

Chapter 7 looks forward to how the environmental agenda may develop and the steps that the UK accountancy profession might consider as an appropriate response.

The report is augmented with a review (Appendix 1) of the relevant legal situation in the UK and Scotland together with some guidance on further sources of information on this crucial but difficult area. Appendix 2 contains the interview questionnaire and Appendix 3 provides some sources of additional information.

Endnotes:

¹ See, for example, Gray *et al* (1993).

² See, for example, Institute of Directors (1992), Bebbington *et al* (1994).

³ This is dealt with in more detail in Chapter 2 and Appendix 1 but see also, for example, Ball (1991), Ball and Bell (1994), Handler (1994).

⁴ For more detail on sustainability and its relationship with business and accounting see, for example, Gladwin (1993), Maunders and Burritt (1991), Gray (1992), (1994), Gray *et al* (1993), Bebbington and Gray (1993), (1995), Rubenstein (1994).

⁵ See especially, Gray *et al* (1993), Bebbington and Gray (1995).

⁶ For more detail see, for example, Elkington *et al* (1991), Gray *et al* (1993).

⁷ Most particularly CERCLA (1980) and SARA (1986) - Superfund. For more detail see, for example, Newell, Kreuze and Newell (1990), Dirks (1991), Rabinowitz and Murphy (1991).

CHAPTER 2

THE ENVIRONMENTAL AGENDA, LEGISLATION AND ENVIRONMENTAL MANAGEMENT

The research concentrates explicitly on the direct challenges that accounting may have to face as environmental issues translate into matters of business practice and legislation. This chapter is a brief overview of these direct influences. In particular this chapter considers: the environmental agenda in the UK and how it is developing; the growing body of environmental legislation; the development of environmental management; and, finally, the developing of environmental accounting for management. The conclusion points to the importance of environmental management systems and the potential role of accounting.

The environmental agenda for business

It is apparent that the UK faces a complex and rapidly developing environmental agenda which will have an increasingly important influence on business management. This agenda might usefully be thought of as comprising three strands:

- changes in general climate, *eg* consumer preferences, society's attitudes and employee reactions;
- systemic change in the business environment that affects, or will affect, all organisations, *eg* the landfill levy; packaging legislation; contaminated land liability; and environmental auditing and management standards; and

- changes specific to the organisation or industry, *eg* controlled substances, air and water emissions, industry codes of practice and controls on particular resources such as hardwood.

Such an agenda places a significant burden on organisations. Each company needs to monitor the environmental agenda in order to identify its own exposure to business risks and to recognise likely issues requiring changes in business practices. The review in this section is general. Figure 2.1 sets out a guide to more specific sources of information.

Figure 2.1 Monitoring the corporate environmental agenda

Experience has shown that many British organisations seem unaware of the range of issues that are likely to affect the business in the near future. At its simplest, each organisation must be aware of three areas of information and assistance:

- Locally based sources such as local authorities, local enterprise companies, local regulators (especially now the Environmental Agency [EA] and its Scottish equivalent [SEPA]) and local 'green business clubs' which have grown significantly in recent years. More detail can be obtained from, for example, Business-in-the-Environment.
- Each organisation must be monitoring the developing agenda through environment business networks and information sources. Important sources of information include The Centre for Environment and Business in Scotland and the Institute of Environmental Management; The Environment Council and publications such as ENDS.
- Each organisation should be in close contact with its industry representative body which will frequently be monitoring the industry agenda and be a major source of advice and guidance on both threats and current best practice.

There is an enormous amount of accessible and well crafted information available to any organisation which looks for it. (See also Appendix 3).

The impact of the developing environmental agenda on business is widely accepted as highly significant, even critical, and growing. The approaches of commentators vary:

- exploring the profitable opportunities open to environmentally aware businesses¹;
- warning about the increasing costs or loss of 'licence to operate' that failure to address environmental issues will bring²;
- attempting to negotiate a new relationship between business and environmental practice³; or
- examining the perceived fundamental incompatibility between conventional business practice and sustainability⁴.

There seems to be a universal acceptance of both the ubiquity and the magnitude of the issues for business⁵. In addition, factors such as the significant growth in environmental consultancies during the early 1990s (recorded by ENDS); the upsurge in environmentally related business initiatives and regulations (for example, EMAS, BS7750, ISO 14001, Eco- Labelling, Supplier Chain Audits, Environmental Reporting initiatives); and the establishment of new professional bodies for environmental auditing and environmental management all speak of a sea change in the climate in which business operates. Such observations are supported by the number of business surveys which record the increased concern and attention given by organisations to environmental issues⁶.

The precise drivers of this sea change are less obvious. The impact of green consumerism has been less dramatic than anticipated by its early enthusiasts. The impact of the green employee must be muted by the exceptionally high levels of unemployment in the UK and the increased incidence of short contract working. UK legislation has been enacted and brought into force more slowly and with a lesser direct business impact than might have been anticipated. Other drivers include personal concerns of management, often influenced by their families' perceptions of the issues⁷. Many important business environment initiatives have remained voluntary, the most obvious examples would be the EU

Environmental Management and Audit Scheme (EMAS) and the initiative of environmental reporting. Despite this, it is clear that the environmental agenda is advancing and is most likely to continue doing so.

To speak of a revolution in business activity would be, however, over optimistic. Studies of business reactions to the environmental agenda have identified regularly a recognition that environmental issues are only one more of a raft of concerns to which business must give attention and are certainly not the most pressing of those⁸. Indeed, a survey by the Institute of Environmental Management (IEM) (1993) reported a widespread concern by environmental managers about the real level of priority and response being offered by business. That survey reports the following comments:

Conflicting interests are a major hurdle. Other initiatives and priorities have resulted in previously agreed environmental programmes sliding down the priority list

Short termism during a period of recession, leading to increased focus on returns to investors at the expense of longer term strategies, based on the usual problems of cash flow and management, has slowed the progress of environmental management

These seem to suggest that, despite a widespread rhetoric and the growing level of concern about environmental issues, the matters are not, in practice, driving deeply into the organisation and producing the sorts of changes that might be expected⁹. A clue to this is provided in a further quotation given by the IEM (1993) survey:

We are legislatively driven. There is neither the time nor the resources available to do more

This may, indeed, be a very important, and perhaps very widespread, view. The principal language of environmental response by business, in the UK as elsewhere, has been concerned with 'voluntary initiatives' and 'market driven initiatives' and 'moves away from command and control'¹⁰. This language has been accompanied, in the UK especially, by something

of a legislative vacuum arising from a political atmosphere in which regulation is seen as unacceptable. Ironically, this is changing and it is to legislation that we now turn.

Legislation, business and the environment

One might reasonably expect that legislation, actual and promised, would be amongst the major drivers of corporate environmental response. There has been a steady increase in the volume and detail of environmentally related legislation, (see Appendix 1 for a brief overview of some major areas of environmental law that affect corporations in Scotland). The impact of legislation, however, seems to have depended on several elements, *inter alia*:

- the actual contents of the legislation;
- the method and timing of implementation;
- awareness of the legislation in business;
- interpretation and application of the regulations;
- monitoring of legislative compliance; and
- enforcement of fines and penalties through the courts.

UK legislation, increasingly dominated by EU regulation, is increasingly complex and has an ever growing coverage of issues such as: proscribed processes and substances; air pollution; water pollution; treatment and disposal of wastes; contaminated land; radioactive substances; pesticides; genetically modified organisms; health and safety at work; and hazardous substances. This panoply of legislation has the potential for significant impact on many manufacturing and manufacturing related organisations, eg transport and waste disposal. It is likely that few large and/or potentially vulnerable organisations have been unaffected. This potential for change is, however, diluted by a range of factors.

Such evidence as we are aware of¹¹ suggests that a great many organisations, especially small and medium sized enterprises, are largely unaware of the actual and potential legislation affecting their operations. Such lack of awareness seems, initially, surprising¹². However, this is

supported, perhaps even encouraged, by other factors. There is, for example, the difficult problem of attempting to assess the likely incidence, the likely impact and the likely enactment of potential law. There are difficulties in interpreting the existing law. For example the definition of what is or is not 'waste' for the purposes of legislation is contentious and far from simple. Similarly, the more widely discussed matter of contaminated land and liability for its remediation has been a matter of considerable confusion and one upon which many companies desire greater clarity¹³. In practice, the interpretation of the law depends, in the first place, on negotiation with the regulators (typically the EA and SEPA) and, secondly, on the courts who, for an issue to be brought to their attention, require an active and sufficiently powerful regulatory regime. There is a suggestion, but no formal evidence of which we are aware, that regulatory bodies are understaffed and have great difficulty in keeping up with the material with which they need to deal, let alone pursuing offenders in their own right. There is an equally worrying, but perhaps better documented, concern that the level of penalties for transgression are applied neither consistently nor sufficiently harshly to be the motivator or deterrent that we might expect. Again circumstantial evidence is available to support this contention. For example there is the *Scottish Environmental Monitor* (Spring 1995) headline 'Courts fail to get tough with polluters' or *Environmental Law and Management's* (August 1995) survey of environmentally related cases brought and fines imposed.

This increasingly widely held perspective on the regulatory regime is well summarised by Vidal and Cordahi:

British industry, many national and international lawyers believe, has had an easy time with environmental legislation. Her Majesty's Industrial Pollution Inspectorate (HMIP), under financed and overworked, is regularly accused of rubber stamping existing practices rather than forcing industry to use less polluting techniques. The law may be there, but, say the critics, there is little concerted pressure on industry to clean up. (Guardian: Society 30 August, 1995, p5)

In general, however, the suggestion seems to be that the current regulatory regime will become steadily tougher. This is reinforced by the inception of the EA and the SEPA¹⁴, by an increased attention to the

capacity for individuals to bring cases to court under criminal law rather than waiting for local authorities or regulators to bring them, and by the steady increase in environmental legislation itself. At the time of writing the UK's Environment Act 1995 is the principal new piece of legislation¹⁵.

For the purposes of this project it seems difficult to be precise about the likely effect of legislation and, in particular, its likely impact on corporate financial statements.

The development of environmental management

Environmental management might best be thought of as referring to the way in which an organisation systematically codifies and organises its response to environmental issues. It covers everything from an initial review of major environmental impacts, through determination and adoption of an environmental policy, to strategic analysis of the organisation's positioning with respect to environmental threats and opportunities. As a result all the key activities associated with an organisation's environmental response: risk assessment; determination of liabilities; assessment of legal exposure; cost saving opportunities; environmental auditing; environmental reporting; public relations management; and so forth, become systematised and integrated into the day-to-day planning and running of the organisation through the environmental management function. It is important to record that there is a growing amount of concern, even scepticism, about the relationship between the environmental management system and environmental performance. That is, the standards of the environmental management system are primarily about information systems and the recognition and identification of environmental issues, not about environmental impact *per se*. The assumption that one cannot control something unless one measures it, an increasingly common claim, has, it seems to us and other commentators, led to a fallacious assumption that because one measures something it will be controlled.

Environmental management has become a major and complex area of activity¹⁶. From our present perspective, however, environmental management is particularly important because, to a large degree, it provides

the context within which accountants will make their own responses to the environmental agenda. That is, if accounting is not to take a lead in the environmental positioning and response of an organisation we can, at least, reasonably expect accounting to respond to the organisation's explicit needs. These are typically, and increasingly, expressed through the environmental management system¹⁷.

It is only possible to provide a brief review of environmental management here. It seems to be the case that an effective environmental management system permeates the organisation and is fully integrated with all other systems such as strategy, performance appraisal, and capital investment. It is the environmental management system which will identify areas requiring attention, the costs and other resources that this will entail and the procedures that need to be undertaken to minimise the negative organisational impact or to maximise the organisational benefit. Generalising is difficult but it seems that the environmental management system is providing two distinct functions: identifying and responding to risks; and looking for efficiencies and cost savings. The advantages of environmental management tend to be sold on these bases. Some of the best known and perhaps best managed of such initiatives are the *Aire and Calder Project* which was a major regional waste minimisation project organised by the Centre for Exploitation of Science and Technology (reported in, for example, *Waste Minimisation: a route to profit and cleaner production* published by CEST, 1995) and the Energy Efficiency Office's *Good Practice Guides* in its *Best Practice Programme Series*. Other examples of best practice cases can be found in most good environmental management textbooks, through the Institute of Environmental Management or Business-in-the-Environment, for example. Figure 2.2 indicates the stages in the development of an environmental management system.

Figure 2.2 Stages in the development of an environmental management system

- Assess organisational impact;
- Develop environmental policy;
- Set corporate objectives and targets;
- Identify responsibilities;
- Set departmental/divisional responsibilities;
- Integrate management systems;
- Set procedures and controls;
- Develop information systems;
- Undertake training;
- Monitor, collate and report information;
- Feedback

Adapted from Gray et al (1993) p52.

The costs, revenues, commitments, liabilities, changes in policy and other matters which derive from the environmental management system will, in turn, create financial implications that the accounting system will need to record, respond to and, where possible, support. In organisations where a systematic, effective and thorough environmental management system is running, we can generally assume that, with the exception of major 'shocks' such as major fines or public relations disasters, the environmental management system will provide the stimulus to which the accounting system, in particular the financial reporting system, must respond. See figure 2.3 for a brief review of environmental management system schemes.

Figure 2.3 Schemes for the accrediting of environmental management systems

It is usual to assume that such an environmental management system will be developed and accredited under one of the extant voluntary environmental management schemes. The most demanding of these schemes is the European Environmental Management and Audit Scheme (EMAS), followed by the British Standard BS7750 (which is closely modelled on the quality standard BS5750). The least demanding (if only in its lack of an external reporting requirement) of the standards is the International Standards Organizations' ISO14001. ISO14001 is dominated by US companies and looks set to sweep the field of environmental management standards. It is a moot point whether this is an example of the bad driving out the good or a case of the US standard being 'more realistic' and therefore a mechanism which, in the long run, will actually achieve greater environmental sensitivity. For an up-to-date review of the environmental management standards either consult the Institute of Environmental Management material or see, for example, KPMG's Envirobrief Autumn 1995.

The development of environmental accounting for management

The accounting information system will act as a major intervening variable between the environmental management system of the organisation and the consequent reporting and accounting in the financial statements. The financial statements are dealt with in more detail in the following chapter. Consequently, for the sake of completeness, it is necessary to be explicitly aware of the role of the management accounting system in this context.

It has been widely mooted that developments in financial accounting have had the often adverse effect of driving developments in management accounting. In terms of management accounting being developed primarily to help managers control their organisations, rather than as a means of reporting on that management, the concern is probably sound. However, it also seems to be the case that management accounting systems are not sufficiently innovative to support an innovative management system. External shocks such as changes in financial accounting practice on, for example, research and development may also produce positive

benefits to the organisation in causing management accounting systems to respond. Whilst there are, as yet, no major external accounting shocks arising from the financial reporting system, the development of an environmental management system and environmental reporting whether within an environmental management system context or not have raised demands for more proactive management accounting.

While it would appear that such developments in management accounting are still fairly scarce¹⁸ there seems little question that the development of environmental management systems requires four levels of response from management accounting.

- Management accounting must not be a brake on innovation. The obsession with 'bean counting' must not prejudice innovative management decisions. Typical examples of where this potential conflict can occur are provided by performance appraisal and capital investment. A performance appraisal system dominated by financial criteria which are insensitive to innovative and/or longer term environmental criteria will, in effect, prevent the organisation from taking essential steps towards an environmental response¹⁹. Similarly, there are examples of investment appraisal and capital budgeting decisions failing to overcome reactionary financial criteria operated by accountants when this was not in the longer term benefit of the organisation. Environmental and financial criteria will often conflict in such circumstances and the management accounting system will need to be sufficiently flexible to respond.
- The management accounting system can provide a most useful stimulus to the company seeking cost and efficiency savings which are compatible with reduction of environmental impact. The most widely trumpeted examples relate to waste and energy minimisation where separate identification in the accounting system can alert management to potential cost reduction activities. More subtle recognition of the way in which rising environmental costs are often embedded in non allocated overheads can produce startling examples of potential cost savings through informing line managers of the activities under their control which generate major environmental costs to the firm.

- The management accounting systems and the organisation's accountants can offer a major input in the assessment of the financial dimensions of environmental risk and evaluating various environmental opportunities and threats. Whilst it is the case that many accountants are active participants in the organisation's senior decision taking, it is equally obvious that this is not always the case. Opportunities for innovative developments in management accounting are overlooked as a consequence.
- Accounting offers one of the mechanisms through which an organisation can begin to look to the longer term environmental agenda and, in particular, towards the implications of sustainability for the company. Suggestions as to how these new management accounting systems may be developed are beginning to emerge. Varying from the more basic approach taken by the Tellus Institute in the US²⁰ through to the calculation of 'sustainable costs' proposed by CSEAR in the UK²¹, new information systems, new financial calculations and new decision processes will probably be necessary if organisations are to embrace a longer term environmental agenda²².

It seems likely that the more developed the company's understanding of these roles for management accounting the greater will be its awareness of the financial implications, costs, liabilities and opportunities, that the environmental agenda represents to the company. Equally, it seems likely that a company which has not examined and developed the management accounting aspects of the environmental agenda will be unlikely to give much attention to the financial accounting and reporting implications. Whilst, we have not sought to test this 'hypothesis' in any formal way, we do find that the level of a business's awareness of the financial environmental interface is reflected in both its financial and management accounting awareness and practice.

Conclusions

In recent years, there has been a rapid, and seemingly inexorable, growth in the manifestation of the environmental agenda as it affects business. This is a complex agenda comprising many different, though, related aspects. It is difficult not to have some sympathy with companies which are either bewildered or irritated by this situation, especially when environmental issues must, from a conventional economic point of view, appear to many companies to be relatively trivial matters when compared with the more immediate and pressing issues of business life. In the short term it is still not conclusively obvious to many companies that the developing environmental concern is one to which every business must respond. However, the evidence suggests that the environmental agenda will become even more complex and of even greater moment to businesses in the long term.

It is currently considered by companies and commentators alike that the most sensible response to this complex situation is to adopt and implement an environmental management system. This allows for a systematic response to environmental issues and may, in some cases, yield financial benefits to the organisation, even under current conditions.

The role of accounting is fairly clear. It can be obstructive to environmental developments; it can be proactive with the development of environmental accounting; or it can ignore the issues altogether. There is not a great deal of evidence yet on the extent and nature of the response of the accountancy profession but such evidence as there is suggests that responses tend to fall into the first and third categories. Most commentators, and many of the professional accountancy bodies, are active in exhorting accountants to undertake a proactive response. Without such a response it is unlikely that companies will be able to implement and exploit fully the nature of an environmental management system. Without parallel developments in internal accounting systems, it seems extremely unlikely that companies will either be aware of the financial implications of the environmental agenda or be in a position to report those implications in the financial statements, even if they wish to do so.

Endnotes:

- ¹ See, for example, Schmidheiny (1992), Confederation of British Industry (1992), International Institute of Sustainable Development (1992), International Chamber of Commerce (1991).
- ² See, for example, Edgerton (1989), Ghosh (1991), Wilsher (1991), Maltby (1995), Rubenstein (1989).
- ³ See, for example, Elkington (1987), Elkington *et al* (1991), Davis (1991).
- ⁴ See, for example, Dauncey (1988), Goldsmith (1988), Gray (1994), Plant and Plant (1991).
- ⁵ See Newton and Harte (1996) for a somewhat more cautionary interpretation.
- ⁶ See, for example, Gray and Collison (1991) for a summary.
- ⁷ See, for example, Gray *et al* (1995a) for an examination of this.
- ⁸ See, for example, Gray *et al* (1993), (1995a), Bebbington *et al* (1994), Gray (1994).
- ⁹ See also, Gray *et al* (1995a).
- ¹⁰ See, for example, Business-in-the-Environment (1992), CBI (1986), (1990), IISD (1992), Schmidheiny (1992).
- ¹¹ Much of this evidence is circumstantial and/or is emerging from this and related projects - see, for example, Bebbington *et al* (1994), Collison *et al* (1996), Gray *et al* (1995a), Zahid (1995) but see also *ENDS* 251 (13) on the duty of care for waste.
- ¹² See, for example, Gray *et al* (1993).
- ¹³ See, for example, Maltby (1995).
- ¹⁴ See, for example, Reid (1995).
- ¹⁵ Details on this and other developments in environmental law can be found in sources such as *CBI Environment Newsletter* Number 18 September 1995, the publications of the Institute of Environmental Management, *Environmental Law and Management* published bi-monthly by Wiley Chancery, *Scottish Planning and Environmental Law* published bi-monthly by the Planning Exchange, *ENDS* and *Scottish Environmental Monitor* published by Friends of the Earth Scotland. A brief overview of environmental legislation is provided by Neil Fitzgerald in *CA Magazine* September 1995 (pp32-37).
- ¹⁶ There is a considerable range of sources of information on environmental management ranging from the professional briefings provided by organisations like the Institute of Environmental Management through to more general texts such as Bragg *et al* (1993), Welford and Gouldson (1993), Welford (1994), Callenbach *et al* (1993), Sadgrove (1992) and Fischer and Schot (1993).
- ¹⁷ For detail on this argument and its implications see the next section and Gray *et al* (1993), (1995a), Bebbington *et al* (1994). For further perceptions on this issue, particularly from a North American perspective, see *The Journal of Cost Management* 9(2) Summer 1995 where the opening articles all seek to address these matters.

- ¹⁸ See, for example, Gray *et al* (1993), (1995a), Bebbington *et al* (1994), Bebbington and Gray (1995), Milne (1996).
- ¹⁹ The most illustrative examples of this are Gray *et al* (1993), (1995a), Bebbington *et al* (1994), Bebbington and Gray (1995), Rubenstein (1994), Owen (1992), Ditz *et al* (1995) and the projects sponsored and published by the USA's Environmental Protection Agency with the Tellus Institute. The ACCA has reprinted the USEPA's booklet on methods of environmental accounting and the Canadian CMA has issued extensive guidance on approaches to environmental management accounting. Whilst the level of practice still seems to be low, the level of guidance for accountants is increasing steadily.
- ²⁰ See either ACCA's reprint of the booklet by the EPA (US) on environmental accounting or the CMA Guidance Notes numbers 39 and 40 for more detail on this.
- ²¹ The CSEAR approach is outlined in Gray (1992), (1994), Gray *et al* (1993), Bebbington and Gray (1993), Bebbington and Tan (1996), Bebbington and Thomson (1996) and is being explored in experiments with a New Zealand company and in the agricultural industry with the Scottish Office. Other approaches are emerging as companies and researchers respond to the demand for innovative approaches to the area. Notable examples include Rubenstein's work (see, for example, 1994) and experiments such as that undertaken by Ontario Hydro (the results of which are due for publication by the EPA (US) shortly).
- ²² It is appropriate to record that more radical commentators are unpersuaded by this view. Put simply, the argument is that you do not cure a problem, *eg* environmental degradation, by adding more of the thing which helped cause the problem, *eg* financial accounting. The argument is a powerful one and is considered in more detail, together with an explanation of the pragmatic response of 'social and environmental accountants' in, for example, Gray (1992) and Gray *et al* (1996).

CHAPTER 3

ENVIRONMENTAL REPORTING, FINANCIAL STATEMENTS AND AUDITING

External reporting can reflect the influence of the environmental agenda in three major ways:

- broad qualitative and quantitative environmental reports¹;
- the disclosure in the unaudited sections of the annual report of specific, usually isolated, financial numbers related to typically environmental expenditures; and
- formal reporting within the audited financial statements.

It is the last two of these with which we are concerned principally here². The next section will review some of the financial aspects of the environmental agenda. We next turn our attention to a review of UK and other European Union developments in considering the effects of the environmental agenda on financial statements. This will then focus, in somewhat more detail, on the current situation in the UK and, to a lesser extent, Europe. This chapter concludes with a brief review of the potential implications for the statutory auditor.

Financial aspects of the environmental agenda

Chapter 1 opened with a quotation concerning the immense potential of environmental issues to generate liabilities for companies in the US. A reading of other publications could leave the impression that environmental issues were solely a matter of generating increased profits for the aware business. Whilst it would seem to be impossible to assess

with any certainty whether UK companies as a whole will be more or less profitable as a consequence of the increased awareness of environmental issues, it does seem likely that there will be both costs and benefits, winners and losers at least in the short to medium term³.

Illustrations and cases abound in which authors outline the major cost savings or revenue generation possibilities arising from the environmental agenda. There seems little dispute that organisations can save costs or open up new markets. For example, the UK Energy Efficiency Office, through its Energy Technology Support Unit (ETSU), regularly publishes cases which demonstrate cost savings through energy efficiency and management. Similarly, the *Aire and Calder Project* (CEST, 1995) demonstrated a variety of waste minimisation strategies which reduced costs. Text books on environmental management and accounting contain examples of major cost savings. The following quotations from leading UK companies are not untypical⁴:

... the project has demonstrated that monitoring waste helps to save costs of waste disposal by identifying costs and measures for improvement... (NatWest Group plc)

... considerable cost reductions in effluent treatment running costs along with reduced chemical usage... (BlueCrest Convenience Foods Ltd)

In contrast, significant costs can be associated with environmental response. By way of illustration, *ENDS* (July 1994, p15) reports on the increasing costs of waste disposal; the Chemical Industries Association has published its members' experiences and expectations of current and future environmental spend; the *Green Ledgers* book of cases⁵ itemises where the often significant environmental expenditures will emerge in the development of environmental management accounting. Examples abound of guidance and warnings to companies on how to assess potential environmental risks and liabilities⁶.

The probability is that environmental issues will present both cost saving opportunities and major expenditures. It seems equally likely that it will be difficult to assess where, and when, these different costs and savings will fall⁷. If we maintain a conventional financial accounting perspective, it seems very unlikely that cost savings or new revenue

opportunities will have any impact on the financial statements. That is, whilst revenues might rise and costs might fall it is difficult to see how this could raise any issues for the accountant in the construction of the financial statements. Alternatively, it seems more than likely that additional costs and liabilities, particularly if they raise going concern questions, will emerge as being of importance to the financial reporting function.

Reporting financial numbers

The reporting of specific financial numbers outside the audited financial statements might take many forms. Indeed there is no defined limit on the potential practice in this area. One indication of the form such reporting might take is offered by the United Nations (UN) in their recommendations on environmental reporting. These recommendations are summarised in figure 3.1.

Figure 3.1 Recommendations for environmental financial reporting from the UN CTC ISAR's 9th session

In the directors' report:

- Environmental issues pertinent to the company and industry;
- Environmental policy adopted;
- Improvements made since adopting the policy;
- Enterprise's environmental emission targets and performance against these;
- Response to government legislation;
- Material environmental legal issues in which the enterprise is involved;
- Effect of environmental protection measures on capital investment and earnings;
- Material costs charged to current operations;
- Material amounts capitalized in the period.

In the notes relating to the accounts:

- The accounting policies for recording liabilities and provisions, for setting up catastrophe reserves and for disclosing contingent liabilities;
- \$/£ amount of liabilities, provisions and reserves established in the period;
- \$/£ amount of contingent liabilities;
- Tax effects;
- Government grants received in the period.

Source: Gray et al 1993, p215.

Although the text of figure 3.1 is a UN recommendation it gives a broadly representative indication of the current thinking in the profession and elsewhere about the sorts of numbers which ought to appear in the annual report. Subsequent guides on environmental disclosure, particularly in Europe, have typically included a selection of the financial numbers suggested by the UN. This disclosure of individual financial numbers related to the environment appears to be seen as a half-way house between non financial environmental reporting and full integration of environmental and financial reporting. The distinctions drawn at the start of this chapter between disclosure in environmental reports, disclosure of individual numbers in unaudited sections of the annual report and disclosure within the financial statements begin to blur. Certainly, there is no mandatory regulation in the UK requiring corporate disclosure of these individual environmental figures, except where this is implied by the current financial reporting framework. In this area it is North America that has led the way with the UK and the rest of Europe moving to catch up.

North America's extensive and detailed response to the potential of environmental issues having direct effects on the financial statements of companies appears to have been driven by three factors:

- the existence of detailed and specific legislation which has direct impact on the financial statements, the most obvious being the Superfund legislation in the US;
- a litigious environment in which liabilities arising from, for example, problems with wastes are highly likely to lead to court action, and voluntary disclosure is discouraged; and
- a firm and direct response from the accounting profession itself.

The work of the Canadian Institute of Chartered Accountants (CICA) in this field is probably the most thorough. Figure 3.2 summarises its thoughts on the nature of environmental costs.

Figure 3.2 Examples of costs of environmental measures and environmental losses

Costs of environmental measures:

- Expenditure aimed at preventing, reducing or recycling effluent/emissions/wastes;
- Costs of producing more environmentally friendly products;
- Costs charged under polluter pays principles;
- Costs incurred in restoration or remediation of water, soil or land caused by normal operating activity of organisation or past activities at a site;
- Clean up of pollution as a result of an accident;
- Costs incurred in research and development, assessments and impact statement preparations and site investigations and assessments;
- Costs incurred in environmental administration such as policy development, management structures, information systems and environmental audits;
- Costs incurred to assist resource recycling, re-use, substitution or increasing the efficiency of resource use;
- Costs incurred to recycle, re-use or reduce waste production;
- Costs incurred in support of wild life conservation, replanting forests or restocking fish supplies.

Environmental losses:

- Fines, penalties and damages arising from non-compliance with environmental laws or consents;
- Costs incurred where facilities have been shut down due to environmental concerns;
- Assets of the entity which cannot be recovered due to environmental concerns.

Source: Adapted from CICA, 1993a, p9-11.

The CICA has then taken matters further in order to distinguish 'period costs' and costs which potentially are capitalisable. Its views on period costs are summarised in figure 3.3.

Figure 3.3 Environmental costs relating to current accounting periods*Costs related directly to current period benefits:*

Costs of environmental measures that relate directly to benefits received in the current period and that should be charged to it include: treatment of waste products; costs of hazardous waste disposal; and clean up costs related to current operating activities.

Costs related indirectly to current period benefits:

Environmental costs that bear only an indirect relationship to benefits of the current period include: ongoing environmental administration, compliance, assessment and audit activities; and employees' attendance at study groups and seminars re environmental issues.

Costs viewed as 'period' costs or losses:

Many environmental costs incurred will simply be viewed as 'period' costs or losses. These include:

- Costs that do not have sufficient ties to future benefits and therefore cannot be capitalised or deferred. Examples are: research cost for the redesign of products and processes to prevent and abate damage to the environment, or conserve non-renewable and renewable resources; donations to programs related to the environment; and recycling programs;
- Costs that are related to the activities of, and benefits received in, prior periods, but that do not qualify as prior period adjustments. Examples are: clean up of a polluted site that has been abandoned, decision to clean up was made by management; clean up costs related to prior period activities in excess of the estimated recorded in prior periods (benefits received in those prior periods); and clean up of a non owned site previously used, the clean up being required as the result of new laws or regulations;
- Costs that do not yield any benefits, that is, losses;
- Fines or penalties for current non compliance related to operating activities.

Source: CICA, 1993a, p20.

Only some of these costs will, currently, require separate disclosure but the increasing size of these numbers will gradually bring a greater array of environmental figures into the materiality requirement. In addition, the separate disclosure of individual costs and liabilities, typically in the notes relating to the accounts will ensure a much higher profile being given to environmental matters in the financial statements.

At the time of writing, however, the accountancy profession in Europe is steadily increasing the attention given to the financial accounting aspects of the environmental agenda. Consequently, discussion papers and statements from the accountancy profession are appearing with increasing regularity. Whilst we give an overview of some of the trends in professional deliberations in the next section, we should stress that this is neither a complete nor an up-to-the-minute review because of the rapid pace of change and the increasing level of detail in the area.

The response of the accountancy profession in Europe

Early exploration of the general issues⁸ has now given way to more explicit consideration of detailed issues. We should note that there is a potential tension in this response in that the profession has appeared determined to respond entirely within existing accounting conventions and categories and has, so far, managed to avoid exploration of the wider issues raised by, for example, the EU Fifth Action Programme on the Environment and its concern with sustainability and full cost accounting⁹.

A number of papers from the European professional accountancy bodies deal specifically with financial reporting and give some flavour of the way in which the profession's thinking is developing¹⁰.

Environmental Issues in Financial Reporting was issued as a discussion draft in January 1995 prepared by a Working Committee of the Accounting Advisory Forum (the 'Accounting Forum') following a request from the European Commission and issued on behalf of DG XV of the Commission. The terms of reference for this document, described in its introduction, are to prepare an initiative in the context of the Fifth Action Programme. However, it represents a relatively modest step in relation to the Programme's far reaching and radical proposals. Indeed the document explicitly states that it *does not aim at setting new requirements* but aims to *give guidance as to the application of the provisions of the 4th and 7th Directives with respect to environmental issues*. Its broad structure covers definitions of terms, and recognition, measurement, and disclosure issues. Issued as guidelines in February 1996 and extended to cover the assessment of environmental risks and liabilities, the guidelines, although not mandatory, set down a benchmark in European accounting practice¹¹.

Another major paper was published in April 1995 by ICAEW. *Financial Reporting of Environmental Liabilities - A Discussion Paper* was prepared by a working party set up by the ICAEW Environment Steering Group. The title of this paper is rather misleading since its discussion is not concerned only with liabilities. The four main areas explored are: the definition and treatment of environmental costs; recognition of environmental liabilities; impairment of assets; and disclosure. This paper draws on the Accounting Forum's discussion draft and both draw on a number of other sources including CICA *Environmental Costs and Liabilities: Accounting and Financial Reporting Issues* (1993a). The ICAEW paper makes greater use of the CICA work. In particular, it concurs with and reproduces its definitions of environmental costs. The definitions in the Accounting Forum draft are not identical and this could lead to confusion. The ICAEW paper also makes an explicit acknowledgment of associated auditing initiatives.

The Fédération des Experts Comptables Européen (FEE) has also given significant attention to the issues through the FEE Environmental Task Force. One example of FEE's interest in the subject area is provided in FEE 1994 *Investigation of Emerging Accounting Areas*, in which environmental accounting is addressed as an emerging area, although it does conclude that substantial environmental accounting seems fairly remote. The Task Force issued a set of exhortations for the profession in the light of a workshop that it held in late 1994. While some of these statements go far beyond conventional financial reporting, the document urges that *every accountant should be able to evaluate the consequences of environmental issues in relation to normal accounting and auditing practices in the financial statement audit*. This in turn, FEE recognises, will require changes in the education and training of accountants. One inference from this is that we should not expect accountants, at least in Europe, to be capable, currently, of recognising such issues. This inference must ring alarm bells in the accountancy profession.

Looking more widely, very few references to environmental issues currently appear in statements of standard accounting practice, financial reporting standards and related documents. A search of *Accounting Standards on Disk* up to FRS 8 (ASB, 1995) yielded six instances of the word

environmental. There comprise two references in each of SSAP 13 *Accounting for Research and Development*, *The Operating and Financial Review*, and a relatively obscure technical release from the ICAEW (FRAG 3/93) *Provisions for claims in the financial statements of non-life insurers*. In addition, the word 'environment' in the physical sense is mentioned in the exposure draft of *Statement of Principles* Chapter 4, which deals with recognition (ASB, 1995), and in ED51 *Accounting for fixed assets and revaluations* (ASC, 1990). Although there is very little in extant UK accounting guidance on environmental matters we reasonably expect, as a consequence of the increasing attention that the accountancy profession is giving to the environment, that this will rise rapidly in the near future. Our search excluded the ASB discussion paper on *Provisions*.

At first glance, the ASB's relatively controversial discussion paper *Provisions* (ASB, 1995) was the first major initiative to address issues of environmental measurement. Chapter 4 of *Provisions* deals explicitly with 'environmental liabilities' and whilst the bulk of these can, the paper argues, be handled within the normal provisions framework, there are some which require more attention. These additional recommendations are summarised in figure 3.4.

Figure 3.4 Additional recommendations on environmental liabilities in the ASB's discussion paper on provisions (1995)

- Provisions for environmental liabilities should be recognised at the time that the entity becomes obliged, legally or constructively, to rectify the environmental damage. The amount provided for should reflect the extent of the entity's obligation (para 4.2.3);
 - Provisions which satisfy the requirements of paragraph 4.2.3 above should be recognised unless a reasonable estimate of the obligation cannot be made (para 4.2.6). ... although this would lead to a requirement to disclose this fact;
 - Where contamination of a recognised asset has occurred that the entity is obliged to clean up, a provision should be recognised; if the entity has no obligation to clean up, no provision should be recognised. In either case, the asset involved should be tested for impairment (para 4.2.9);
 - Provisions for environmental expenditure should be capitalised when, and only when, the expenditure provides access to future economic benefits; otherwise the provision should be charged immediately as an expense (para 4.3.6);
 - Abandonment work that the entity is obliged to undertake should be provided for in full at the time the environmental damage is inflicted (para 4.4.5);
 - The amount recognised as a provision for abandonment costs should be discounted where this has a material effect (para 4.4.10);
 - Abandonment costs that merit recognition as a liability should be capitalised as part of the cost of the facility concerned. As a result the costs will be charged as an expense over the useful economic life of the facility, subject to any need to recognise an impairment of the facility (para 4.4.12);
 - Where, subsequent to its initial recognition, the best estimate of the amount of the abandonment provision changes, the entire change of estimate should be capitalised and charged to the profit and loss account prospectively over the remaining life of the facility (para 4.4.14).
-

Despite this recognition of the importance of the issues, ultimately the discussion paper has been seen as disappointing from an environmental point of view. For example, *Environmental Accounting and Auditing Reporter* (Vol.1, No.6 December 1995/January 1996, pp2-4) concludes that:

the discussion paper and the proposals in it fall far short of what is really required: a comprehensive review of all the areas where financial reporting and environmental issues interact. (p3) ... the paper treats the environmental liability issue as a 'side-show' rather than as a main event and the opportunity has been lost to debate some serious expectation, recognition and measurement issues (p4)

The professional initiatives reviewed briefly here suggest that the attention given to the physical environment is likely to increase, but slowly. In essence, however, the current UK situation is that there are no specific guidelines on environmental valuation nor any specifically required environmental disclosure except where they fall within existing financial reporting requirements (typically provisions, liabilities and exceptional or extraordinary items) and are, in themselves, material. This situation contrasts starkly with that currently existing in the US¹² and with any informed concern for the environment rather than for those manifestations of the environment which can comfortably be captured with extant conventional accounting principles. The accountancy profession has, for example, chosen to stay away from issues relating to either environmental reporting or sustainability, issues on which accounting skills and experience are increasingly proving to be essential. The profession's response as it relates to statutory auditing is not, as might be expected, very much different.

The statutory auditor's response to environmental issues

Research investigating statutory auditors' experience of and responses to environmental issues¹³ found that auditors were becoming increasingly aware of the way in which environmental issues could affect their audit opinion and potential liability. In general, the larger firms of auditors (especially the 'Big 6') were more familiar than small or medium sized firms with the issues and were more likely to have established training on the matter or have integrated some specific procedures for environmental issues into their audit manuals. This disparity could be a cause for concern.

The research did find a strong desire for non mandatory guidance to auditors on how to address these issues without increasing their own exposure to liability.

The accountancy profession has, in a manner similar to the reaction on accounting for environmental matters, begun to consider these issues. The paper, *Financial Reporting of Environmental Liabilities* (ICAEW, 1995), also acknowledged auditing initiatives which *will almost certainly lead to a demand for any gaps in the financial reporting requirements to be filled*. Specifically this paper refers to work in this area being undertaken by the AICPA and the IFAC discussion paper *The Audit Profession and the Environment* issued in May 1995. It was prepared by the Auditor and Environment Subcommittee of IFAC's International Auditing Practices Committee (IAPC) and drew heavily on the work of CICA in this area¹⁴. The paper recommends that the accountancy profession should address the need for auditing standards in this field and hints at an expanding role for auditing in the development of new services such as environmental reporting, EMAS and the attestation functions related thereto.

Conclusions

Although the professional accountancy bodies worldwide were initially somewhat slow to react on environmental issues, the level of activity now suggests that there is an increasing awareness that the environment has potentially serious implications for all branches of the profession. However, current research would raise the question of whether more than a minority of practitioners is as yet so convinced. Less clear is whether a full response to the environmental challenge is possible within current accounting and auditing procedures. Our judgment is that only a small minority of the profession has recognised this as a potentially crucial question. Putting aside any moral questions or concerns about the profession's ability to innovate that might arise from these observations¹⁵, we need to ask to what extent these observations are true and, if true, to what extent they need to concern us. This brings us neatly back to where we started. Whilst environmental issues are growing in importance, the literature and the response of the professional bodies seem to suggest that accountants may be largely content to drift along with the tide and not take initiatives in the area. Such apparent inertia would appear to be the result of some combination of:

- a perception that the financial implications are not sufficiently material to warrant attention;
- the reluctance of accountants to innovate; and
- the lack of formal guidelines on accounting treatment and disclosure in the area.

Endnotes:

- ¹ See, for example, Gray *et al* (1993); Gray *et al* (1995).
- ² Although the broader issues of environmental reporting are addressed in Chapters 4 and 7.
- ³ Little hard evidence is available on the longer term impact of environmental issues on corporate profitability. Our view is that the pursuit of sustainability is incompatible with current ways of business and will thus, in conventional profitability terms, produce more costs than benefits as currently measured. For an explanation of this view see, for example, Gray *et al* (1993), Gray (1992), (1994), Rubenstein (1994). For a more detailed and less radical analysis which nevertheless brings out this potential for conflict, see Birkin and Jorgensen (1994). For a variety of views on the costs and benefits of going green see the special forum published by Harvard Business Review in its July/August issue (1994).
- ⁴ These quotations are taken from *Business in the Environment's* 'A Measure of Commitment: Guidelines for measuring environmental performance' (London: BiE/KPMG) 1992 pages 71 (NatWest) and 43 (BlueCrest).
- ⁵ See Ditz *et al* (1995).
- ⁶ See, for example, Hood's analysis in *Integrated Environmental Management* (1995).
- ⁷ For different explorations of these matters and, in particular, exploration of both the costs and the benefits see, for example, Azzone and Manzini (1994), CEST's (1995) publication of the *Aire and Calder Project* which produced both savings and cost constraint, and Piesse's (1992) analysis of stock market reaction to environmental expenditures.
- ⁸ See, for example, Gray (1990); Macve and Carey (1992).
- ⁹ See, for example, Gray and Stone (1994), and Bebbington (1993), for discussions of this.
- ¹⁰ Readers are strongly recommended to consult *Environmental Accounting and Auditing Reporter* published ten times a year by IBC Publishing, 57-61 Mortimer Street, London, W1N 8JX for up to date information on developments in financial accounting issues relating to the environment.
- ¹¹ The guidelines, *Environmental Issues in Financial Reporting* are available from the EC Financial Information Unit.
- ¹² See, for example, Price Waterhouse, (1990), (1992), (1994).
- ¹³ See Collison (1996) and Collison *et al* (1996).

- ¹⁴ See the references and bibliography for more detail on CICA's work in the field. Much European thinking in this field is also heavily influenced by the work done by the Limperg Institute in Amsterdam whose work was also drawn on for the IFAC discussion paper.
- ¹⁵ See, for example, Gray (1990), Owen (1992), Gray *et al* (1993), (1995a), Bebbington *et al* (1994).

CHAPTER 4

CORPORATE REPORTING BEHAVIOUR AND ENVIRONMENTAL ISSUES

Surveys have catalogued the steady growth in environmental disclosures by companies in the UK¹. The level of analysis in these surveys is fairly low, making it difficult to draw conclusions and predictions from the data. The suggestion, however, is that disclosure is related to size and may be influenced by the industry of the reporting company. It is not uncommon to draw conclusions from the wider social disclosure literature and research and assume that this also applies to environmental disclosure. Whilst broadly plausible, this assumption has not been formally tested². One striking factor noted by the surveys has been the relative lack of disclosure of financial data on environmental issues. The disclosure, however, also appears to be rising.

The monthly survey magazine, *Company Reporting*, has covered environmental disclosure in a sample of over 500 UK company annual reports. The surveys have reported that environmental disclosure by large UK companies, regardless of its quality, rose from 23% of the sample in 1992, through 26% in 1993, 27% in 1994 to 32% in 1995³. Within this small rise there has also been a decrease in the proportion of companies providing broad, general non-informational statements on the environment, and a small increase in the number of examples of financial disclosure.

The *Company Reporting* data does not provide all the insights that we need but we can find that over 12% of companies in their sample gave some form of financial disclosure on environmental issues. This is broken down into financial quantification of targets achieved and other, more obvious categories of costs. For example, whilst only 2% of the *Company*

Reporting sample gave any detail on remedial costs in 1992, this had risen to 4% by 1993. This figure rose further to 9% in 1994 before falling back to 4% in 1995. Over the same period disclosure of liabilities and contingent liabilities rose to 3% in 1993 (from a 'negligible' number in 1992) and has stayed at this level since. 1995 also saw 2% of companies providing information on 'punitive costs'.

Whilst we can infer from other survey evidence that these percentages will be higher for, say, the top 100 companies and, thus, correspondingly lower for the rest of the sample, it is quite apparent that environmental financial disclosure is still a rarity. For 'leading edge' environmental reporting, the best source is probably the ACCA Environmental Reporting Awards Scheme run annually. This is reported in several places but *Certified Accountant* has carried a detailed appraisal of the leading entries to the scheme each year⁴. More detail is given in *Company Reporting* together with illustrative examples drawn from their samples. *Company Reporting* notes the dominance of the chemical and utility companies in the field and the general inconsistency with which companies report both financial and non financial environmental data.

This confirms one of the initial assumptions of this research, namely that environmental issues are not being reflected in financial statements. Our own investigation of reporting follows and, drawing from the *Company Reporting* experience, we should expect to find a relatively low level of financial disclosure on environmental issues, as the Scottish sample will be less dominated by the top 100 UK companies. In addition, we can anticipate some evidence of sectoral differences in the extent and quality of the reporting.

Environmental reporting in Scotland

Prior research has provided a strong suggestion that the development of voluntary disclosure on such matters as the environment will be led by larger companies⁵. That research has also indicated that such disclosure changes over time. Therefore we chose to examine two years' annual reports from the top 100 Scottish companies for 1993 and 1994. Scottish companies were defined as the largest companies operating in Scotland

plus the largest companies registered in Scotland. Size under either or both of these criteria led to inclusion up to the point where we had selected 100 companies. The *Scottish Business Insider* was used to determine the sample. Where we were unable to obtain annual reports then the next company in rank order was added to the list. It proved difficult to obtain all the reports we wanted for 1993 and substitution was taking us to smaller companies. Consequently, the 1993 sample comprises only 91 company annual reports. A content analysis was performed on each annual report to identify: environmental disclosure on different subject areas related to the environment; financial disclosures related to the environment; and any illustrative statements or expositions on environmental financial numbers in the reports. The research method employed was identical to that described in detail in Gray, Kouhy and Lavers (1995b). The essence of content analysis is that one measures the volume (in this case, the proportions of pages) of attention given by a company to a particular issue on the assumption that attention may correspond, albeit loosely, with the importance of the issue to the reporting entity. It is a widely used method to capture data on non financial and voluntary areas of disclosure.

Three researchers undertook the content analysis. All researchers analysed a sample of ten annual reports jointly, negotiated any differences in method and, where necessary, involved a fourth researcher experienced in the method to help resolve any differences. Only when there was a high level of confidence in the compatibility of the research methods used by the three researchers was the formal analysis undertaken. The resultant disclosure figures were then entered into dBase III, initial analysis undertaken in Lotus and a final and detailed analysis undertaken in Minitab. The results of this process are reported here.

Figure 4.1 presents basic environmental disclosure data for the companies in the sample taken from their annual reports published within the two years 1993 and 1994.

Figure 4.1 Areas of environmental disclosure and their incidence

<i>Areas of disclosure</i>	<i>Percentage of the sample disclosing in this category</i>		<i>Average volume of disclosure (proportion of pages)</i>	
	<i>1993</i>	<i>1994</i>	<i>1993</i>	<i>1994</i>
Environmental policy	29	22	0.26 (n=26)	0.09 (n=22)
Environmental audit	10	8	0.08 (n=9)	0.14 (n=8)
Waste, packaging, product, pollution	22	23	0.22 (n=20)	0.33 (n=23)
Financial data	4	5	0.33 (n=4)	0.16 (n=5)
Sustainability	1	1	0.07 (n=1)	0.03 (n=1)
Energy	5	8	0.06 (n=5)	0.10 (n=8)
Other environmental	12	14	0.13 (n=11)	0.16 (n=14)
<i>Totals: Any environmental disclosure</i>	51%	36%	0.32 (n=46)	0.40 (n=36)

Figure 4.1 points to a decrease in environmental disclosure between 1993 and 1994, albeit from a level in 1993 which is broadly comparable with the disclosure levels found elsewhere in the UK and overseas. The *Company Reporting* data relates to the top 500–600 companies. We can probably anticipate that the Scottish top 100 would lie within the *Company Reporting* sample but would inevitably be skewed towards the lower end. Thus, we infer, the results for 1993 do not look particularly out of line with the *Company Reporting* figures. The 1994 figures do, however, look out of line. The trends and changes shown in figure 4.1 are exaggerated by changes in the composition of the sample across the two years (71 companies are constant to both years of the sample) but the direction and trend itself are not affected by the sample change.

The decline in disclosure is counter intuitive and we have no reliable explanation for it. The figure shows that although the proportion of companies providing environmental disclosure has fallen, the amount disclosed by the disclosing companies has risen somewhat in the period.

The areas in which the environmental disclosure has been provided have also changed somewhat during the period. As we should expect in a maturing climate of environmental management and audit we see a decline in reporting of environmental policy and audit and a small rise in other areas of disclosure⁶. It arises, broadly, because a company may initially report its intentions *vis-a-vis* the environment and, as it develops its environmental strategy, it will then begin to report actual achievements and activities. However, whilst we still see a significant number of companies mentioning environmental policy and audit, the amount of environmental disclosure is not dominated by it. Increasingly such references are brief allusions to BS7750, EMAS and ISO14001. The trend in the Scottish companies is, as with other larger British companies, towards product, waste and pollution reporting with an increase in quantified targets and achievements.

Further detail is given in figure 4.2 where the environmental disclosure is reported against industry sector.

Figure 4.2 Areas of environmental disclosure by sector

<i>Areas of Disclosure</i>	<i>Percentage of the sample disclosing in this category</i>							
<i>Industry</i>	<i>Food (n=19/22)</i>		<i>Textiles (n=4/6)</i>		<i>Engineering (n=17/13)</i>		<i>Electrical (n=3/6)</i>	
<i>Year</i>	<i>93</i>	<i>94</i>	<i>93</i>	<i>94</i>	<i>93</i>	<i>94</i>	<i>93</i>	<i>94</i>
Environmental policy	22	24	50	33	24	8	100	50
Environmental audit	5	5	25	17	0	8	33	17
Waste, packaging, product, pollution	17	24	0	17	6	15	67	50
Financial data	0	0	0	0	0	0	0	0
Energy	11	19	0	0	6	0	0	17
Other environmental	17	9	0	0	0	8	33	33
<i>Totals: Any environmental disclosure</i>	<i>33%</i>	<i>29%</i>	<i>50%</i>	<i>33%</i>	<i>35%</i>	<i>38%</i>	<i>100%</i>	<i>83%</i>

Figure 4.2 Areas of environmental disclosure by sector (continued)

<i>Areas of Disclosure</i>	<i>Percentage of the sample disclosing in this category</i>							
<i>Industry</i>	<i>Processing (n=7/7)</i>		<i>Financial (n=27/30)</i>		<i>Retail (n=6/6)</i>		<i>Other (n=7/9)</i>	
<i>Year</i>	<i>93</i>	<i>94</i>	<i>93</i>	<i>94</i>	<i>93</i>	<i>94</i>	<i>93</i>	<i>94</i>
Environmental policy	43	29	11	17	33	17	71	33
Environmental audit	29	14	8	3	0	0	29	22
Waste, packaging, product, pollution	100	43	11	17	0	0	57	44
Financial data	29	29	4	7	0	0	14	11
Energy	0	14	4	7	0	0	0	0
Other environmental	43	14	4	14	0	0	57	44
<i>Totals: Any environmental disclosure</i>	<i>100%</i>	<i>86%</i>	<i>46%</i>	<i>38%</i>	<i>33%</i>	<i>17%</i>	<i>86%</i>	<i>55%</i>

Given the wide differences in the number of companies in each of the sectors reported in figure 4.2, simple comparisons of percentage disclosure rates must be undertaken with some care. Only in the food, engineering and financial and other services sectors did we have sufficient companies for sector analysis.

The patterns of disclosure shown in figure 4.2 are diverse and not particularly clear. We can see the dominance of environmental policy in the retail industry, the apparent increase in diversity of disclosure in the processing, electronics and extractive companies and the suggestion of a tendency to only report in one or two areas in most of the other industry sectors, most notably the financial and other service companies. It would, however, probably be ambitious to try to use the data in figure 4.2 to suggest evidence of a particularly strong relationship between environmental disclosure and industry sector⁷.

In part, the absence of apparently clear signals in this data may well arise from the diversity of the companies included in the sample. For illustration, BP are included in the extractive industry figures (included in 'other' in figure 4.2) and, being one the UK's most consistent and prolific social and environmental disclosers, are quite likely to be swamping the other companies in that group.

The picture is not a great deal clearer when we look at volumes of disclosure. Figure 4.1 has already shown that 'environmental policy' and 'product and process related' disclosure dominated in 1993 whilst 'product and process related' disclosure dominated in 1994. The electronic and processing companies dominated these areas of disclosure in terms of volume. Volumes of disclosure were, generally, fairly small (as can be inferred from figure 4.1) and only the electronic, processing, extractive and aerospace companies produced consistently total environmental disclosure in excess of half a page across the two years.

Further examination of the data provided evidence that appeared to strongly support the notion that environmental disclosure was related to the size of company. Size was measured by turnover, capital employed, profit and numbers of employees. Whilst there was no statistically significant relationship (at 5%) between the variables for 1993, the trends point unerringly in this direction. The size variables and the incidence of disclosure were statistically related (at 5%) in 1994 and, further, the

disclosing companies were generally reporting larger profit figures than the non disclosing companies. This phenomenon of statistical relationships evident in one year of the data and not in others is consistent with much of the reported research literature in the field, although not offered by that literature as an explanation of conflicting results⁸. Exploration of this issue (Mohammed, 1995) has confirmed size as an important variable in 'explaining' environmental disclosure but has also noted the longitudinal instability of the relationships between disclosure and factors such as size. This lends some support to the suggestion made earlier that the diversity of Scotland's top companies make the inference of general conclusions a difficult, and possibly unwise, activity.

This general, descriptive, outline of Scottish company environmental reporting provides both a background to the later elements of the study and a means of beginning to explore the types of environmental disclosure, and particularly financial environmental disclosure, which we can expect to see as the study progresses. It is apparent that no patterns have emerged from this exploration of general environmental disclosure. It is to financial reporting in particular that the next section is directed.

Financial reporting on the environment in Scotland

It is apparent from figures 4.1 and 4.2 that the incidence of financial reporting on environmental issues is as scarce in Scottish companies as it is in the rest of the UK. Virtually no companies are providing explicitly any financial data on environmental issues and only the very rare company is providing such data within the financial statements. This is the most important observation to emerge from the examination of the Scottish annual reports as it confirms, rather graphically, the initial premise of this research project. That is, whether or not there is a major pressure building up on environmental legislation and related business drivers, there is negligible evidence of any financial, *ie* economic, concern in company reporting. Such financial numbers must, we can only presume, be unknown to the company, be ignored by it, be immaterial to it or not be subject to separate disclosure. It is the purpose of the rest of the project to decide which of these is the actual case.

It may, however, be instructive to record some examples of the financial and financially related environmental disclosures that we did find. A selection is outlined in figure 4.3. The range of figures reported in figure 4.3, the diversity of approaches to that reporting and the inconsistency in company reporting all point to an immature situation in financial environmental disclosures. In addition, the rise from 4% to 5% shown in figure 4.1 can hardly be relied upon as a trend. While the leading companies, some of whom are shown in figure 4.3, are voluntarily undertaking to disclose potentially important financial numbers, there seems to be no reason to assume that the majority will do so until such time as financial disclosure of environmentally related issues is mandatory.

Figure 4.3 Illustrations of the types of financially related environmental disclosures found in the sample

- Oceonics Group (1993): contingent liability, contingent on litigation, arising in the US;
 - Shanks and McEwan (1993): that environmental costs are rising is mentioned, no figures, contaminated land is discussed and reference to financial numbers involved in a restoration liability;
 - Scottish Nuclear (1993): figures on capital expenditure, safety and training, decommissioning costs and provisions, accounting policy disclosed;
 - Inveresk (1993 & 1994): environmental provision, capital investment figures and capital commitment to meet consent levels;
 - British Petroleum (1993 & 1994): capital investment, period costs, provisions including abandonment costs, contingent liabilities and an accounting policy on liabilities;
 - Meyer International (1994): the financial implications of rising consents and/or BATNEEC are referred to, only figures given relate to charitable (environmental) donations;
 - BAA (1994): value of fines borne, capital investment, savings from energy efficiency;
 - Guinness (1994): expenditure figure on water improvement scheme.
-

Conclusions

One of the initial assumptions of this project, that environmental matters are not reflected in company financial statements and annual reports in Scotland, is amply borne out. The financial reporting situation in Scotland would appear to be little different from that for the UK as whole. The same also appears to be true for wider environmental disclosure where approximately 50% of large Scottish companies are voluntarily undertaking some, albeit cursory, environmental disclosure in their annual report. We were unable to discern any trends in our examination of company reports from 1993 and 1994 although the observed decline in the number of companies disclosing was counter intuitive. As is the case elsewhere, Scottish environmental disclosure seems to be led by the larger companies. This does not mean, of course, that only large companies disclose. Inveresk is a particularly good example of a medium sized company with state of the art environmental disclosure, including financial data. The absence of patterns, industry trends or any notable advancement in reporting quality all suggest an unclear situation regarding Scottish environmental disclosure and financial environmental reporting in particular. The remainder of the monograph explores this further.

Endnotes:

- ¹ See, for example, Gray (1993) for a summary.
- ² See also Gray *et al* (1995b) and Adams *et al* (1995).
- ³ This and the following data is taken from the appropriate issues of *Company Reporting* (see, for example, August 1993) and from a report prepared by *Company Reporting* for the *Financial Times* in September 1995, which is contemporaneous with the research reported here. A later special report from *Company Reporting* in March 1996 suggests there may actually be a decrease in companies reporting financial information.
- ⁴ For more detail see, for example, Owen *et al* (1992); Gray and Owen, (1993); Owen and Gray (1994); Gray *et al* (1995); Owen *et al* (1996). Environmental reporting is widely monitored in the UK and elsewhere. For other UK examples see, for example, KPMG's *UK Environmental Reporting Survey 1994 and 1995* and CSEAR's *Social and Environmental Accounting* which provides updates on surveys. The *Environmental Accounting and Auditing Reporter*, published by IBC and edited by Roger Adams is also a very good source of updated information, especially that relevant to practising accountants.

- ⁵ See, for example, Gray *et al* (1995c) for a review of this.
- ⁶ See Gray *et al* (1993) and Gray *et al* (1995a) for discussions of this contention.
- ⁷ At least part of the problem must also lie with attempting to classify large and complex multinational companies into single sector groupings. In many cases this must be artificial.
- ⁸ See, for example, Gray *et al* 1993.

CHAPTER 5

UNDERSTANDING THE CORPORATE POINT OF VIEW

The previous chapters give an indication of both the complexity and the lack of clarity of the environmental agenda facing UK businesses. This chapter reports on interviews with companies which confirmed and developed this observation. There is a complex and potentially critical agenda facing business but many companies seem relatively unconcerned by it and, except in very few cases, see little need to involve accounting at this stage. In reporting the interviews, there are no dominating and arresting themes we can pull out as threads with which to knit together the experiences of the companies. Consequently, we will provide a brief overview of our initial findings before reporting the interviews in more detail and, subsequently, extracting more tentative and subtle but potentially more important conclusions at the end.

Conduct of the interviews

The central research question was most appropriately addressed in face to face interviews. Consequently, semi structured interviews were held throughout 1995 and into early 1996 with the equivalent of the finance directors and environmental managers or directors of 17 companies. An initial open ended discussion was held on two sites as a preliminary pilot study. The results of this informed the following interviews but those initial discussions are not reported here. The intention had been that a pilot study for the project would produce a more formal interview template which could be used to guide subsequent visits. It became increasingly apparent as the interviews progressed that we were

having difficulty in isolating and focusing upon the central issues relevant to the project. Thus the interview format developed iteratively as the project progressed. The final template employed in the majority of the interviews is shown in Appendix 2.

Companies were approached initially either by telephone or by letter depending on the existing relationship that the team had with the company personnel. All but two companies which were approached agreed to be interviewed. Interviews were held by five researchers with one researcher attending at least one interview held by other teams of researchers to ensure a degree of consistency. Four interviews were held by more than one researcher, the remainder were conducted by single researchers. Most of the interviews were taped, permission having been requested, and transcripts prepared. In five cases these transcripts were returned to the interviewees, at their request, for agreement on content. In all cases, confidentiality was guaranteed. Although this results in some loss of context in reporting the interviews, we have taken steps to ensure that the respondents, and especially their statements, cannot be identified by the reader. Each interview lasted at least 50 minutes.

Nine interviews were held with a chief accountant or finance director, five with both the finance director or chief accountant and environmental manager or environmental director, one with the environmental manager, one with the environmental manager and the marketing director and one each with the group controller and economic analyst. The industries included in the interviews are shown in figure 5.1.

Figure 5.1 Industry sectors covered by the interviews

- Electronics (1 company);
 - Paper (2 companies);
 - Packaging and printing (1 company);
 - Timber products (1 company);
 - Engineering (1 company);
 - Food retailing and distribution (1 company);
 - Manufacturing (1 company);
 - Retailing and customer service (1 company);
 - Utilities (3 companies);
 - Oil and gas exploration and production (5 companies).
-

A series of interviews could make no claims to provide a generalised picture of Scottish industry. Nevertheless, the range of industries covered, and the range of size of company from multi national corporations to medium sized family owned company, suggests that a substantial proportion of the likely issues should have arisen in the discussions.

Overview

The interviews offered the prospect of relatively sophisticated insights into the financial impact of environmental issues. Despite the experience of the interviewees, it proved difficult to draw out any firm themes from the interviews.

Most interviewees saw environmental issues as growing in importance and as a source of increased costs for the company. Interviewees sketched out a list of environmental drivers as they affected their companies (see figure 5.2). Most viewed environmental legislation as complex, confusing, increasing and potentially expensive. All the companies also worked to meet compliance and, indeed, seemed to want to stay ahead of legislation. They all, in one way or other, stated that they 'wanted no nasty surprises'. Whilst in many cases the expenditure driven by the environmental agenda was not insignificant, in only two cases did this emerge, in any form at all, in the financial statements. This, it seems to us, was because:

- there are no accounting rules on the subject and many of the interviewees saw accountants as essentially following rules;
- the expenditures could be handled within the normal expenditure cycle of the company so that revenue and capital cycles of the companies did not appear to be swamped by the additional environmental items;
- the implementation of the law and its application appeared to be occurring at a 'sensible rate' which could be handled by a sensible and aware company in 'bite sized chunks'; and
- the timescale of environmental legislation from its first discussion through to its actual implementation was long enough for many companies, if sufficiently aware, to build it into their normal business cycle.

For example, issues like IPC and other matters which appeared in EPA (1990) were being discussed widely before 1989. Some of the provisions of the EPA (1990) had still, in 1996, to be brought into force. An aware business has, therefore, had over seven years within which to prepare itself on some issues.

Figure 5.2 Environmental drivers with revenue, cost and/or liability implications arising in the interviews

- Board awareness/attitude;
 - Attitudes to the longer term agenda;
 - International (eg US) experience likely to influence UK and Europe;
 - Extent to which present issues were predicted by the company some years ago;
 - Legislation;
 - Lobbying, preparing for and contributing to government and external body initiatives;
 - CFCs;
 - Land contamination;
 - Some customer pressure;
 - Consent levels;
 - Regulators;
 - Landfill levy;
 - Duty of care;
 - VOCs;
 - Acquisitions;
 - Packaging levy;
 - EMAS and environmental management standards;
 - Difficulties of finding alternative technologies;
 - Market opportunities;
 - Supply chain development;
 - Loans secured on land;
 - Abandonment costs;
 - Punitive costs (public issues/fines).
-

However, the size of some of the environmental catastrophes seen in recent years and the general level of environmental and legislative ignorance within business do seem to suggest that too enthusiastic a belief in the wisdom and awareness of corporate environmental responses would be unwise.

There would appear to have been a steady increase in the 'shocks' experienced by companies as a consequence of the environmental agenda. These shocks, by their nature, arise because companies had failed to predict, and manage, them. A small number of highly publicised examples plus many, lesser known, local or national embarrassments suggest that all organisations need to be aware of the potential danger to their organisations, regardless of any damage to the environment, and that any tendency towards complacency must be avoided at all costs.

The journal of Environmental Data Services (ENDS) (246, July 1995, p16) offers the headline *Businesses sleepwalk towards landfill tax* over a report on a survey which finds an astonishing level of ignorance amongst companies about the details of a landfill tax and its introduction. With this background we turn to report the detail of the interviews concentrating first on the perceived drivers of the business environmental agenda before looking at the direct accounting and financial issues and the perceived problems facing companies.

Environmental drivers

Corporate culture and individual awareness

All of the companies interviewed appeared to have some mechanism for monitoring the environmental agenda. For the majority, however, this was no more important than monitoring a whole range of other business agendas:

Why pick on the environment? There is a whole range of risks that this business must be aware of, the environment is just one of them... . The environment is not yet featuring as a major source of risk .

There was a major distinction between those few interviewees who saw environmental issues as offering a threat to assumptions about 'business as usual' and those who saw it as 'just another business risk'. This distinction is crucial because it affected the extent to which companies saw a long term radical change as likely. Where such change was seen as possible, the company culture was usually beginning to change and the 'tone from the top' was beginning to import a more personal environmental awareness into all aspects of the organisation¹. This was fairly rare, however. Indeed one respondent in a plc said:

We've never identified environmental issues as such as being something that we, the board, should talk about ... it's happening as practical issues arise.

Throughout the interviews, there was a sense of satisfaction that the company had the matter under control. Given some of the issues which subsequently arose, this was questionable. Specifically, we were unable to discern any systematic industry effects. Indeed there is a novel suggestion that industry classification is less important in explaining environmental response than the physical and geographic location of the site, the processes employed and the attitude of the organisation's management. This suggestion is also derived from the legal review (see Appendix 1). However, as will be seen later, on some issues there did appear to be some similarity in the responses of the oil and gas companies as well as in the responses from the utility companies.

Monitoring the environmental agenda

All interviewees were aware of at least some of the major changes in their business environment. All talked freely of environmental audits, EMAS and IPC. The need for care in acquisitions, especially those involving land, came up frequently. Terms such as *vigilance*, *avoiding nasty surprises* and *preparing for new changes* were a regular feature of the discussions. Where one might reasonably expect that contaminated land had the potential to have an impact on the business, the company had undertaken some investigation of the land and/or its history, but not always through

a systematic environmental audit. Without knowing a great deal more about the businesses it was not possible for the research team to assess, in any realistic terms, whether the organisation had undertaken sufficient monitoring. Very few companies seemed in any way anxious about the agenda they were monitoring and two stated explicitly that there were no major issues on the environmental agenda at the moment as far as they were concerned. One company's view seemed reasonably typical of many when they stated:

We are pretty aware of what environmental issues there are in the company. Most of them are pretty harmless.

The business climate

A major theme throughout the majority of the interviews was the change in the business climate. An earlier section touched upon acquisitions and environmental audits, both of which are slowly raising awareness in industry and raising the environmental stakes. These were far from the only business climate drivers.

Much has been said about the importance of the environmentally aware consumer, but our respondents were generally more mixed in their responses. Those companies with a close customer or public relationship were clearly aware that they must be seen to be responsive on environmental issues, seeing public perception as crucial to the business. In addition, there are also market opportunities arising from the environmental agenda. In the paper industry, for example, there are marketing opportunities for more 'environmentally friendly' paper products. But these opportunities appeared to be fairly marginal and frequently did not seem to relate to the organisation's actual environmental activity. As one consumer products company stated:

... the green consumer is a joke, they will buy what looks nice and what they want, not what is good for the environment It is important that we can say to our customers that we are an environmentally aware

company. I don't think it brings new business but it stops them going away. No customer wants to deal with an environmental problem that might be passed onto them.

These potential marketing opportunities arose either as a consequence of changing tastes or, more substantially, as a consequence of new technology and innovation. But the incidence of such potential advantages was difficult to assess because they seemed to arise either as 'opportunities for promoting the company' or as a source of longer term financial benefits which were more anticipated than currently actual. We encountered only one occasion where the customer was an obvious driver of cost changes and this was a corporate customer who did not want to be faced with disposal of the product at the end of its useful life and requested that the company take back and dispose of the product. Whether this might be thought of as a version of the green consumer or, as we tend to think, the growing importance of awareness in the supply chain, is perhaps unimportant.

The greening of the supply chain has been identified as a major force for environmental change in the corporate sector. A typical example is provided by Business-in-the-Environment's initiative in this field which is spearheaded by their 'Buying into the Environment' (guidelines for integrating environment into purchasing and supply) publication (1993). It was not, however, raised explicitly in the interviews with any frequency. Only a timber products firm raised it as an issue with the potential for major change and one consumer services company expressed its determination in assessing the competence of firms which disposed of its wastes. In addition, a packaging company and two paper companies identified industry trends and changes in the available technology as offering new opportunities for better environmental options. Although this series of interviews did not have the opportunity to pursue this issue, there were examples of companies who had, for example, found that payback periods on new plant with better energy efficiency were too long or were anxious because the necessary technology to solve the problem they faced was not available to them.

Relatedly, industry initiatives seemed implicitly to be a major source of increasing environmental awareness. The most obvious of these are the environmental audit/environmental management and audit scheme (EMAS) developments although:

... ISO 14001 will drive out the EMAS and BS 7750 because of its lesser standards. I can understand the US's concern about the publication of information which only encourages legal action.

ISO 14001 is the proposed International Standards Organization's (ISO) standard on environmental audit and management systems. It is argued to be less demanding than the British Standard (BS7750) and the EU's EMAS standard, the latter requiring disclosure of environmental information and independent attestation of that information. However, company involvement with an industry's development of both the British Standard and EMAS trials has given environmental issues a very high profile and raised awareness throughout the industries concerned. A natural sense of competitiveness, as well as actual or potential impacts through the supply chain, seems to encourage many of those companies in the environmentally higher profile industries (for example, chemicals, paper, electronics and some consumer products) to address themselves to avoid losing competitive advantage to other companies in the industry. The best known of these would be the chemical industry's Responsible Care Programme but other industries have been affected by the chemical industry's attempt to improve its image and many industry sectors have more quietly got on with recycling programmes (*eg* in the polythene and plastics industry), take back programmes (electronics and automobile suppliers) and exploration of alternative technologies (most notably in the electricity generation industry). Few of these, outside the chemical industry, appeared in our interviews as major cost drivers but they all appeared in one form or another as conscience raising mechanisms that were raising the stakes for companies.

The importance of the financial sector as a driver of, or as an impediment to, environmental change has been discussed widely. Our interviews produced only two examples of activity by the financial services sector which had increased environmental change. One related to a consumer products company whose loan application had been granted

only after evidence of an environmental audit had been presented. The other was a company which expressed concern that its share price was susceptible to perceived environmental risk. On the other hand, three other companies stated explicitly that the financial markets, and analysts in particular, had no interest whatsoever in environmental factors².

Finally, we met evidence of social issues acting as drivers of environmental concern. The well being, health and attitude of employees and potential employees was mentioned by three companies. Local transparency and the views of the local community emerged as important considerations in four companies which had a high profile relative to the size of the community in which they operated. Issues ranging from noise of manufacturing to discharges to a local river all encourage employees, including senior management, to take steps to improve environmental performance.

All of these factors seemed to be at work in encouraging some degree of environmental change in the organisations³. However, there were few examples where it was possible, in the limited time involved in an interview, to attempt to link these changes with potential financial effects on the organisation. This linkage problem was much less apparent when we turned to regulations and legislation.

Legislation, regulation and the regulators

One comment was highly representative:

...it's all legislation driven, either current legislation or future legislation.

Appendix 1 provides an introduction to some of the major aspects of current environmental legislation as it affects UK companies. Figure 5.2 listed some of the dominant issues which are perceived to have affected corporate environmental response. It will be apparent that the issues in figure 5.2 that require, or will require, costly expenditure are driven by a complex and emerging legislation. However, in the earlier interviews, it had not been clear how legislation was directly affecting companies when there seemed to be so much confusion and uncertainty about the current state of regulation.

An important element in this confusion is the time horizon for the introduction of new legislation. As a consequence of monitoring debates, several companies remarked that they could anticipate new environmental regulations well in advance and respond accordingly to avoid any surprises. It seemed to us, however, that not all companies were carefully monitoring these developments. Even when they were, the plethora of environmental legislation did pose difficulties because it made estimation of potential liabilities very difficult.

It subsequently emerged that one of the keys to this confusion was the role of the regulators, the inspectors who monitor and interpret the regulations. It was the regulators who actually determined what companies did and on which companies had most to say:

... increasingly, the regulators are coming into companies and talking the strange language of BODs and CODs, milligrams and micrograms, and general managers do not understand this...

The regulators, it seems, are the means by which legislation reaches and affects, the company. This could be a positive experience in which the regulators were actually of assistance:

... frequently, the regulator knows the best answer to a problem and can save the company money ... the consultants usually tell you what you want to know or already know and charge you a lot to tell you.

However, there was a far from consistent message about relationships with the regulators. The following comments are from two environmental managers in the same industry:

... the company has a very close relationship with the regulator ... and the company is well within its consents ... The key seems to be a very positive attitude to working with the regulator.

... we've really struggled with meeting our consents. Despite massive investment the regulator has still come back and asked for more ...

A further, and perhaps more concerning, recurring theme was a dominant message of unfairness and confusion:

Regulation causes us problems because of the way it is monitored which we think is unfair ... We monitor ourselves on a regular basis which gives us an average output which meets the regulator's standards. But the water regulators come in on an ad hoc basis and may catch one of the upswings in (say) suspended solids and this will push up our annual charge. We are not happy about this. (FD, packaging company)

The same finance director went on to say:

We are also not happy about the way IPC operates for small companies and the definition of how many processes you've got is, in some cases, arbitrary.

This sort of concern was voiced in a number of different ways:

... the rules are applied much more strictly to larger companies ... the small people get away with murder because the regulator knows that at the end of the day the alternative is to close them down and do they really want that on their conscience? So the application of the rules is different ... (FD, food retailing company)

It is not a level playing field at the moment. The regulators come after us because we are one of the biggest companies in the business. The difficulties arise because whilst we want to be good, for moral and commercial reasons, there are so many cowboys in the industry that we lose out in the short run. (Environmental manager, medium sized company)

The inference we are led to is that whilst there is a steady flow of increasing standards from environmentally related legislation, the companies have not perceived this as being a major problem. The problem, many of them seem to believe, arrives in the unevenness of the application of the rules by the regulators⁴. Some of the implications of this perception also come out in the discussion of financial and accounting issues in the following sections.

Financial impact of environmental drivers

The foregoing review of interviewees' perceptions has been reported in such a way as to provide a background to the discussion of financial issues with the purpose of attempting to identify the sources of the financial impacts. As can be seen, the lack of any sense of coherence was the predominant impression from the interviews. Things became a little more coherent when we got down to more detail on the economic implications of the environmental agenda.

Virtually all of the interviewees touched on the market opportunities offered by the environmental agenda. These opportunities varied in intensity and importance but did not, as far as we could assess, promise major, material economic openings over and above any steady strategic evolution of the organisation. There certainly did not seem to be any potential financial statement effects here, other than perhaps an increase in turnover, and so this side of things was not pursued with any dedication.

Interviewees were specifically asked about asset valuation including fixed assets, the need for accelerated depreciation, inventory and inventory write offs. We were surprised to hear virtually no support for the importance of these issues. We met no examples of depreciation or inventory being influenced by environmental issues and the responses on fixed assets were luke warm. The issues that arose with plant and machinery, through, for example, BATNEEC requirements, were not treated as an influence on the value of that asset but, rather, as incurring additional capital and/or revenue expenditure. There was some discussion of contaminated land but this, again, did not generate significant discussions. Most of our interviewees seemed not to be exercised by the matter. More general commentary, in the press, for example, suggests that the contaminated land issue is becoming appreciated more widely and, although the UK legislative position is still rather unclear and the roles of EA and SEPA are yet to be fully operationalised, there seems to be evidence of some slight effect on land values. The interviews, however, were unable to shed any consistent light on the present situation. Only time will tell how important this issue becomes in a UK context. We had expected to find a much higher awareness and concern amongst companies but this

was not the case. For more detail on the contaminated land issue in the UK see, for example, Maltby (1995). This matter was encountered again in the postal questionnaires (see chapter 6). The movement in the UK towards limiting the liability of contaminated land to being 'fit for use' or 'fit for purpose' seems, as far as we could tell, to have largely removed contaminated land from the business agenda. We were, therefore, somewhat surprised to conclude that there were no major matters of asset valuation to concern us.

The principal areas of concern were, therefore, environmental costs and environmental liabilities and provisions.

Environmental costs

There appeared to be a general acceptance that the environmental agenda was creating costs for business, but that these costs were, generally, not of crippling proportions. A major concern, it seems for the future rather than of immediate concern, related to relative advantage. The costs of environmental change were perceived as falling higher on bigger and better companies and therefore hindering innovation. The sense of fairness did emerge in a number of interviews and there was an apparent fear of the 'bad' driving out the 'good'.

On the subject of costs one medium sized company stated:

... costs are clearly rising but met by normal capital policy or revenue ...

This view was echoed in nearly half of the interviews in one way or another. The key, it appeared, was careful monitoring and anticipation so that there were '*... no major leaps in costs ...*' and the company avoided '*... any nasty surprises ...*'. Of particular interest was the message from the oil and gas companies interviewed (companies who could be expected to be most obviously exposed to the environmental agenda and who have dealt with environmental issues for some years now) namely that the environmental agenda was '*... imposing no financial hardship ...*'.

Of some significance was the way in which these costs would work into the company. Whilst many of them would arise as a consequence of regulatory action, as '*direct environmental costs*', many of them would arise through changes, in both technology and costs structures, in the supply chain:

These costs will not be obviously environmental costs, they will be increasing in the costs from our suppliers.

If this was the message from the bulk of the companies we talked to, there were some notable exceptions. If we typify this majority of companies as either '*monitoring and steady*' or '*haven't woken up and lucky*' there were two smaller groups of companies who we might typify as '*leading edge of the environmental agenda*' and '*suffering shocks*'. One of the companies, whose industry has not apparently been of a high profile in the environmental debate, seemed to us to be driving hard at the leading edge of the environmental agenda. The interview with their environmental manager and accountant revealed:

... items of environmental expenditure are increasingly important to the business and they are going to get bigger. You can't establish what the costs are going to be although there will be changes. Supply and demand will increase costs as legislation and regulations affect companies in the industry. ... these costs are incurred to stay in business ... they will not increase throughput or increase efficiency.

For this company, the actual and potential environmental costs were clearly a matter of some substance and required and received considerable attention in the company. Two other companies had undertaken careful and systematic assessment of the potential costs that might reasonably be expected to have a material impact on the organisation in the foreseeable future. The potential costs were highly material but the anticipation of them allowed the companies to set about planning and adjusting² for them so that their final impact should not be too profound. Another company found trying to plan for the large potential risks more difficult:

Exceptional costs would be spillages and you don't know when they will come along, but the costs of these have risen in recent years.

However, it was also important to recognise the optimistic attitude adopted by these 'leading edge' companies. It was apparent that whilst the companies incurring these costs were generally unable to make a 'hard' business case for the expenditure, in that the expenditures showed no immediate, direct, financial returns, in each there was a recognition that the expenditure would enable the company to exploit longer term product and/or cost saving advantages:

The trick is to take a longer view and to invest to reap longer term savings eg water based versus CFC solvents, energy efficiency ... to monitor recycling, take back, waste disposal, supplier chains ... to introduce LCA into all business cases to try and take this longer term environmental view.

This small group of companies who were systematically assessing their financial options ahead of the environmental agenda contrasted starkly with another small group of companies who were experiencing, or had experienced, financial shocks from environmental change. The most obvious of such shocks would be major catastrophes from, for example, spillages or contamination of water tables, especially with the increasing uncertainty over the insurance position on such matters. However, we did not interview any companies who had experienced such matters in the UK. Two companies did, however, talk about examples of major, and unexpected, disruption arising from actions of the regulators requiring, for example, some rapid investment in water discharge or air emission technology.

Far more significant, in our view, were three discussions on going concern problems. This was the first time in our experience or, indeed, in the literature, that the real possibility of companies facing a going concern crisis had been mooted. The concern manifested itself in two ways. First, there was a concern over the future viability of an industry if costs continued in the predicted direction with no other changes in the market. The following quotations come from two different industries:

*If we are not careful we may end up destroying our [name] industry ...
We can push raw material costs up for the whole industry if regulations
go too far.*

There is a point at which you will not have a [name] industry if costs really carry on changing.

Whilst it is clearly impossible to judge the realism of these concerns, the views appeared to be genuinely held and, indeed, compatible with the more gloomy (*ie* if one is committed to 'business as usual' and to an attachment to no radical change as a consequence of the environmental agenda) prognoses for a deeper green future.

Of more import still, however, were the two examples which were reported of actual going concern problems experienced in a group and one further example which is inferred and anticipated in another industry. This issue was expressed most directly by the financial director of a medium sized group exercised by VOC regulation:

A company has had to pay £2 million over recent years with no payback. There has to be a real going concern problem there ... If the company had been stand alone and had been subject to the same inspector, it would have gone under. No question. There are many companies like this but they are protected by the group of companies of which they are a part.

Alerted by this highly significant possibility, subsequent interviews asked this question specifically. Two other companies in different industries either recognised it as a very real possibility or were actually anticipating just such an eventuality. Of equal importance, one further company pointed to competitors who have changed the balance of their business to get out of the more highly regulated area in which they were vulnerable.

Certainly we see the regulations driving some of our competitors out of the business as it is not worth the hassle, and this will be good for our business ... we see this as a potential for the future.

These competitors were the successful ones anticipating future developments but it seems there are likely to be significant casualties in a number of industries. There may already have been such casualties but their demise has passed unnoticed and the role of environmental regulation in that demise has not been identified. This is a matter of major import and deserves more careful investigation. It is not, however, an easy matter to investigate.

Whilst more could perhaps be said about costs, the foregoing has given a flavour of the breadth of issues that companies appear to be facing on environmental expenditure. We now look at environmental liabilities and provisions.

Environmental liabilities and provisions

In general terms, the interviewees did not seem particularly exercised by this matter. Whilst it is impossible to judge with any confidence, it is not implausible that interviewees would be rather more cautious in discussing liabilities and provisions than in discussing the more general issues of costs and revenues. We have no reason to assume that information was being withheld but it is a hypothesis which should be borne in mind. The key elements which appeared to explain this relative lack of interest were:

- emphasis on risk assessment;
- long *versus* short/medium term time horizons; and
- uncertainty and materiality.

Many of the companies included liability monitoring in their general environmental monitoring procedures. Here, there was some suggestion of industry difference. The oil and gas and the utility companies seemed particularly careful about such monitoring. More generally, any assessment of liabilities was likely to be carried out within a more general risk assessment framework within the company. In such a context the comment from one company that *'environment is not yet featuring as a major source of risk'* was not untypical. In part, this predominant attitude seemed to be linked to time horizons, the longer the horizon, the more environmental issues appeared to feature as a source of potential risk. In such cases, however, the potential liabilities were over the immediate accounting horizon and so would feature as a business strategy issue, not as an accounting issue.

Equally significant was the frequently voiced comment about both the uncertainty and the materiality of such risks. Until a more stable legislative and regulatory environment is in place, it seems inevitable that

potential environmental liabilities will be highly uncertain. Equally, except for catastrophes, which did not feature with any of our interview companies, the size of the liabilities involved appeared to be generally fairly small relative to all company liabilities. Consequently, materiality would appear currently to be the single major factor in explaining this broad absence of excitement about potential environmental liabilities.

Recorded environmental liabilities and provisions did not appear to be widespread. One medium sized company had some small environmental provisioning but this was too immaterial to warrant detailed attention. In one case there was a major environmental provision which had arisen in special circumstances and had almost inevitably, in fact, proved to be far too large a provision for the subsequent costs. This provision was subsequently employed to cover above ordinary environmental expenditures as they arose and/or were planned for. Only two other companies seemed to be carrying anything significant by way of environmental provisions but, as one of these said:

If you account for something it becomes a self fulfilling prophesy ... if you make a provision you are committing yourself to actually paying for it. Accounting is not an exact science but it's got a short term cash based approach. We do have provisions at the moment which relate to the environment, removal of asbestos and the provision/up grading of 'bundling'⁵.

Given the background of the extant and potential law covering environmental matters and the deleterious experience in the US we find it difficult to be quite so relaxed about the lack of environmental liabilities and provisioning. It may be that there are, indeed, no major environmental liabilities in UK companies but our reading of the current situation is that this is fairly unlikely and a slightly higher level of anxiety seems appropriate. This brings us to the financial accounting issues.

Financial accounting for the environment

Companies were asked specifically about the bookkeeping and financial accounting aspects of the matters discussed previously. The management accounting and financial management issues of the

environmental agenda are significant and extensive. This was not, however, the focus of this project⁶. The following comment from a manufacturing plc seems to capture the major issues:

We know what the environmental costs are but they won't surface in the financial statements because they are not big enough and there is no requirement for separate disclosure

In this section we will approach the issue of the financial statements by first looking at the cost recording and bookkeeping issues as they arose in the discussions.

Although observing that a complete and accurate recording of specifically environmental costs verged on the impossible, companies saw little difficulty in tracking and recording environmental expenditure:

If it was required that environmental costs were tracked as a matter of course ... we could handle that ... if it were a statutory mandatory reporting requirement we would do it, and we could handle it without any problem in our coding structures

Some companies have already begun this process:

The chart of accounts is increasingly recognising items of environmental expenditure because they are increasingly important to the business and are going to get bigger

This company, similarly, saw no difficulty with this as any organisation has to track the costs that are important to it and environmental costs are no different from any other costs. This perception that environmental costs are no different from other costs was often the reason why companies were not currently recording them separately. Like many other categories of costs they were simply not material enough to warrant the effort:

... there is no business driver to encourage us to pull out separate environmental costs

One other company stated the matter more bluntly:

As far as I am concerned, from a purely selfish accounting viewpoint, the minimum amount of information that I've got to track ... the better

In general terms, the tracking and recording of environmentally related accounting categories raised no surprises and caused no problems. More directly, if a management case cannot be made for tracking and recording such expenditure, the other source of pressure to develop accounting for environmental issues is obviously a requirement to include such numbers in the financial statements. Here, again, two of the principal considerations appeared to be the relative immateriality of the numbers and the wider question of *why pick on environmental expenses rather than any other area*. The simplest explanation as to why we see little or no evidence of environmental issues reflected in the financial numbers in financial statements was that it simply was not yet seen as sufficiently important.

The wider story had both positive and negative aspects to it. One of the 'leading edge' companies said:

We anticipate putting something in our accounts to identify the level of environmental expenditure and provisions ... the amount probably wouldn't be material ... we wouldn't mind our competitors knowing that we are provisioning.

This was one of the more positive attitudes. Another theme of objection related to the purpose and value of environmental financial disclosure. Comments from two companies illustrate this view:

Do you look good because you are spending a lot on the environment? I don't see the point of that. I'd rather make a point of winning an environmental award.

I think if financial environmental disclosure was something you were measuring performance on ... it could be dangerous ... say for example we had only a £5,000 environmental spend and disclosed it, and that was deemed a bad performance, whereas another company might spend £500,000. You have to understand the context in which the expenditure is incurred. ... Comparing Shell's with Esso's environmental spend might be meaningful.

This raised the matter of comparability in environmental financial disclosure. A frequently voiced objection to such disclosure was that, as there was no guidance on the matter, different companies would disclose on different bases. While users may not be terribly interested in such disclosure, experience has shown that if an item is disclosed it will be reacted to and the different bases used in its compilation will be ignored. Companies are, understandably, wary about such an event.

Three companies remarked that the financial analysts do not give any attention to environmental issues and therefore there is no real demand for this information at the moment. One large company did see an important role in educating the financial community as to the sorts of risks that were inherent in environmental issues and saw the financial statements and annual report as an important mechanism for this education. Research suggests that this observation is a sound one and the financial sector acts predominantly as an impediment to environmental change, not as a stimulus for it. This is a general observation that arises from a range of research⁷. It is a conclusion not confounded by the responses to the interviews and is compatible with the results from the questionnaire (reported in chapter 6).

If the markets are not yet becoming exercised by environmental issues, it is apparent that auditors are beginning to raise the issues. Bigger companies, at least those having 'Big 6' auditors, were beginning to experience enquiries in the course of the statutory audit, echoing and reinforcing the findings from Collison (1996) and Collison *et al* (1996). We were warned by one company, however, that:

... my conviction that auditors do not have a clue about business has been reinforced.

Perhaps the explanation for inaction that bothered us most related to the accountants themselves. Reinforcing conclusions from previous work⁸ there were a significant number of comments in the interviews, often from accountants themselves, about the reactive, short term and rule following attitude of accountants. The following comments from several companies illustrate the nature of the concern:

... there is no requirement for separate disclosure ... (Finance director)

... accountants are concerned with the short run bottom line. This concern with short term profit, the lack of education of accountants in the issues and the accountants' reactive attitude to legislation means that accountants will only respond when legislation is in force. ...for the average accountant, environment is just not that important compared with the other issues he or she has to worry about. This is why we are not seeing any contingent liabilities in the financial statements. (Finance director)

There is no need to involve the accountants ... (Group accountant)

I think the accountants would probably agree with me that they do not have a role to play ... the accounting department will keep whatever set of accounts the management find useful in making ... decisions. (Environmental manager)

I have nothing to tell the accountancy function because ... the environmental focus is long term and strategic ... not short term focus solely concerned with measurable numbers. (Environmental manager)

This points to a passivity amongst the accountants and a lack of involvement of accounting with the strategic and innovative processes of the organisation. This message was further reinforced by the widespread desire⁹ for guidance from the accountancy profession on how to account for environmental spend, liabilities and provisions (the ASB's discussion draft had not been issued at the time of the interviews); and the alacrity with which the oil and gas discussions focused on the oil industry's SORP on abandonment costs.

Problems and the future

It is quite apparent that it is difficult to forecast the likely impact of the environmental agenda on business in general and on specific companies in particular. However, the more informed the interviewees appeared to be about environmental issues the more anxious and proactive they were

about those issues and the greater the role they appeared to play in developing and supporting their organisation's environmental strategy. There is substantial business risk associated with the environmental agenda.

Some respondents were concerned with the education of accountants and three particular manifestations of that education. These three points were:

- the passivity of accountants;
- the need to break out of the short term absorption into a longer term perspective; and
- the related matter of understanding sustainability.

Only education can, we suspect, really address these questions but the need for such education and understanding of the issues was illustrated quite starkly by a number of comments that arose in the context of sustainability.

There were three basic forms of reaction to the issue of sustainability. The first reaction arose in the context of an informed discussion of sustainability and its implications for business in which interviewees concluded, in the words of one company:

... sustainability cannot be an issue for this company ... yet!

Such a reaction seems perfectly understandable in the present climate¹⁰. The second reaction, from two companies, was derived from a similar thought process but took it one stage further. As one environmental manager of a large utility stated:

When it all comes down to it, this is really not going to make a difference. I can get quite depressed if I think about the state of the world and where we are going in the future. ... the West is not changing its ways and, at the same time, is exporting its attitudes to the rest of the world ... the big questions are simply not being addressed

Such a view is wholly compatible with the vast majority of analyses of the challenge of sustainability and its implications for current economic and business orthodoxy. It contrasts starkly with four oil and gas companies who all said in a remarkable coincidence of words:

... of course, sustainability of the environment is of primary concern to the company ... we take a very serious and positive attitude towards environmental affairs

Whilst such a response could hardly be thought of as surprising it does, perhaps, suggest that the implications of 'sustainability' have not yet been fully appreciated in some quarters. Indeed, this is probably the more widely held view in UK business and political circles. The positive note is that, the constant ratcheting upwards of the environmental agenda, as witnessed by the increasing concern with the financial aspects of the agenda, may succeed in achieving a wider concern and a much higher level of understanding of these crucial issues. There is, however, a danger of complacency and this is indicated in a very persuasive body of literature which argues against the optimism of such an approach. There is a real danger that the relatively trivial matter of accounting for contingent liabilities will be equated with accounting for the environment and the larger and far more important issues of sustainability ignored. There is a further danger that environmental issues will come to be perceived as only those matters which can be articulated within current accounting and economic orthodoxy. Power (1991), (1992), (1994) perhaps expresses this position most clearly.

Conclusions

The initial perspective of a complex environmental situation facing business was not dispelled by the interviews. We recognise that there is no necessary relationship between a company's environmental impact and the extent to which it is influenced by the environmental agenda. It seems that we might think of corporate response as comprising two levels:

- the extent to which the environmental agenda has a direct and identifiable impact on the organisation; and
- the extent to which the company monitors seriously the future environmental agenda and recognises the larger picture of, for example, sustainability.

The first level generates compulsory environmental expenditure and can require recognition of environmental liabilities and the need for provisions. Its impact is uneven and seems to reflect both the largely ephemeral nature of the alleged green consumer and green employee and the emerging nature of the environmental regulatory framework. The attitudes and behaviour of the regulators seem to be a major force here. The second level generates voluntary or, more accurately, anticipatory costs and potential liabilities. This level seems to reflect organisational culture, personal values and 'tone from the top' more than the regulatory framework itself. It is not obvious that either level is related to the industry sector.

This distinction leads us to develop the crude categorisation of companies we used earlier in this chapter. The categories are shown in figure 5.3. The company is placed in one of these categories as a consequence of its own actions, whether or not prompted by external forces, not as a consequence of the environmental agenda itself. That is, we are still unable to assess whether some companies are being overly prudent and pessimistic or whether many companies have their collective heads in the sands of complacency.

Figure 5.3 Categorisation of companies in terms of their environmental response

- Leading edge
 - Monitoring and steady
 - Receiving shocks
 - Monitoring and complacent
 - Yet to wake up - but lucky!
-

This array of corporate responses is further compounded by the apparently inconsistent application of environmental regulations. The emergence of SEPA and EA may well clarify this situation. But it is a situation which seems to determine the environmentally related expenditures, the rate at which they arrive and their size. Hence, there is no simple answer to the question as to the level of environmental exposure and liability in Scottish companies.

Our strong expectations that we would find examples involving the revaluation of assets, especially land, buildings, plant and inventory, proved largely incorrect. Land was discussed but more in terms of incurring expenses than in significant reductions in value. Despite BATNEEC considerations, we unearthed no examples of a need for accelerated depreciation. In addition to the confused situation that companies appear to perceive, the length of the business and legal cycles are apparently spreading out the incidence of issues relating to asset valuation and bringing them within normal business activities.

However, the very real examples of possible going concern doubts arising from aspects of environmental regulation suggest to us that a conclusion to the effect that there are no asset implications would be presumptuous. The inference we draw is that asset valuation may very well be an important issue, especially for 'not yet awake' firms in the foreseeable future. The truth of the matter, however, will only emerge with time.

Tracking and recording environmental expenditures seems to cause few problems and most companies seem to believe that they have a good grip on their potential environmental liabilities. The bulk of these expenditures and liabilities are assessed currently as being generally immaterial and frequently highly uncertain. This, plus concerns over comparability, seem to be the major reasons why we do not, as yet, see much evidence of environment issues reflected in financial statements.

Of perhaps longer term concern, accountants on the whole do not appear to be particularly active in the field. This apparent passivity together with the absence of formal reporting guidance, although such guidance would appear to be widely welcomed, seems to be a second major explanation of the absence of environmentally related data appearing in the financial statements.

Endnotes:

- ¹ We have reported this observation in other work, see, for example, Gray *et al* (1995a) and Bebbington and Gray (1995).
- ² For an alternative point of view and a development of the financial community's awareness of environmental issues, see, for example, Mueller *et al* (1996).
- ³ See Gray *et al* (1995a) for more examples of this sort of change and some analysis of the extent of the change that can actually be brought about in the organisations involved.
- ⁴ Strangely, we were unable to discover any empirical research into the impact and/or consistency of environmental regulators. Whilst the legal literature (see Appendix 1) has noted this phenomenon and analysed the differences in regulatory regimes, apparently there is no literature which directly addresses this issue. As Appendix 1 mentions, the institution of the Scottish Environmental Protection Agency (SEPA) is, in part, driven by an awareness of this problem and a desire to set a more stable regulatory regime. Similarly, the arrival of SEPA may well raise the profile of regulation, make the legislation clearer for companies and produce a more consistent regulatory environment.
- ⁵ 'Bunding' refers to insulation of pipes and other processes which contain toxic substances, typically liquids, whose spillage would cause problems. It extends to splash trays and even under-floor sealants to prevent the escape of the materials.
- ⁶ For more detail see, for example, Gray *et al* (1993) and Ditz *et al* (1995).
- ⁷ See, for example, Gray *et al* (1993); and Gray *et al* (1996); for summaries.
- ⁸ See Bebbington *et al* (1994).
- ⁹ This assertion seems compatible with the results reported here, is reinforced by the results in Chapter 6 and by Collison (1996) and Collison *et al* (1996).
- ¹⁰ See also Bebbington and Gray (1995) for further evidence and discussion of this reaction.

CHAPTER 6

SURVEY OF FINANCE DIRECTORS AND ENVIRONMENTAL MANAGERS

This chapter represents the final stage in the empirical work undertaken for this project. Following the analysis of corporate disclosure in chapter 4 and the interviews reported in chapter 5, this chapter reports the results from two postal surveys. The advantage of a survey lies in the breadth of views it can potentially capture. Its principal weakness, by definition, must be the lack of depth it can examine when compared with interviews. Therefore, in what follows, some of the more telling issues have not been pursued simply because they were too complex or too sensitive to lend themselves with any confidence to a postal questionnaire method.

The chapter covers questionnaires sent to finance directors and environmental managers. The majority of the questions in the survey instrument were asked of both the finance directors and the environmental managers. This allowed the comparison of responses and views of the two groups. A major stimulus for this project was the observation that managers seemed to be highly exercised by the economic importance of environmental issues for the business sector but that this level of anxiety was not reflected in financial statements. One initial inference from this was that finance directors were less exercised by the issues.

Postal questionnaires

A number of findings emerged from the interviews reported in chapter 5. The purpose of the postal questionnaire was to assess the extent to which these findings might be generalised across a wider range of Scotland's larger companies.

The questionnaires were brief in order to increase the likely response rate. In addition to the findings of the interviews, it was recognised that the newly issued ASB discussion paper on *Provisions* (ASB, 1995) (discussed in Chapter 3) was of sufficient importance to warrant specific attention in the questionnaires. Three members of the research team distilled the essential issues from the interviews and produced draft questionnaires for finance directors and for environmental managers. It is inevitable with postal questionnaires that there is a trade off between the clarity and specificity of the questions on the one hand and the richness and complexity of the data that one is seeking to collect. The final questionnaire was a compromise on these issues. The resultant drafts were then pilot tested. Copies of the questionnaires are available from the authors.

The questionnaires were sent to 200 finance directors and 200 environmental managers. The finance directors were selected by reference to the size of the companies for which they worked. All companies whose annual reports were covered in the analysis reported in chapter 4 received questionnaires. A further 100 were then selected (using the same criteria) primarily to ensure that a sufficient number was returned to permit analysis. Where possible, envelopes and letters were addressed personally to the finance director concerned. All questionnaires were accompanied by a signed letter from the researchers and an envelope for return. The environmental managers were selected at random by the staff of the Institute of Environmental Management (IEM) from their industrial members. The IEM distributed the questionnaire on our behalf. The IEM has over 1500 members. The industrial members are principally from medium or large companies. However, it proved far too difficult to ensure that questionnaires only went to larger companies. The IEM's membership is international and whilst it was ensured that questionnaires went to UK members, we could not ensure that only Scottish companies received the questionnaire¹.

The questionnaires, which were confidential but not anonymous, were analysed using a database and the statistical package SPSS.

Responses of the finance directors

Sixty usable replies were received (30%), a higher than average response rate for this type of research. Although the response rate is good the resultant sample of 60 is still small and restricted the extent of statistical testing, particularly on industry sectors. The sample of 200 companies contained a higher proportion of companies in the financial services; food and drink; and mechanical and general engineering sectors than in other sectors. The responses reflected this emphasis and there was no statistically significant difference between the industry distribution of those in the sample who responded and those who did not respond. Industries were reduced to six broad sectors for this test in order to have sufficient numbers to permit the use of statistical tests. Responses in each sector were as follows:

- (a) food [6] and retail [5];
- (b) textile [3] and processing [4];
- (c) engineering [3], electrical and electronic engineering [3], general manufacturing [5] and aerospace [1];
- (d) oil, gas and extractive [7];
- (e) services [14]; and
- (f) construction [8].

One response did not specify industry and was returned anonymously.

As a whole, finance directors see their companies as sensitive to environmental issues and not complacent about environmental liabilities. They hold widely dispersed opinions on both the past and potential incidence of environmental expenditure and, broadly, do not see their companies as likely to gain or lose by the environmental agenda relative to other firms in their industry.

The finance director respondents do not, generally, see their share price as environmentally sensitive, although they tend towards the view that the financial community is broadly aware of environmental matters. They do not tend to track environmental expenditure in the chart of accounts. They see no insuperable problem with the definition of these

costs. Around half state that they have made reference to environmental issues in their statutory financial statements, which contrasts starkly with the results reported in chapter 4, but very few who have not disclosed intend to do so in the future. 22% of respondents are aware that their statutory auditors have made enquiries about environmental issues but only a small percentage have sought advice from the auditor.

This general picture conveys an impression, similar to that gained from the interviews, that finance directors, as a whole, do not give high priority to environmental issues.

Such a broad characterisation, however, gives too general a picture and masks the diversity of views. To examine this further we undertook, first, a series of cross tabulations and correlations on the finance directors' responses before attempting to explore the data for any evidence of industry related effects. We report these in turn.

Sensitivity to issue

As the project progressed, it seemed increasingly likely that environmental response was driven as much by organisational and cultural issues as by more obvious matters such as industry sector. One of the key questions asked about the extent to which the respondents viewed their company as sensitive to environmental issues. Whilst virtually all respondents gave a positive response to this, the strength of that response was significantly correlated with responses to other key questions. In particular, the more strongly finance directors believed their organisation to be environmentally sensitive the more likely they were to state that the company had incurred significant environmental expenditure, both capital and revenue, and that this would be driven by legislation. Furthermore, these respondents were more likely to expect significant environmentally related revenue expenditure in the future; to track environmental expenditure in the chart of accounts; to be concerned about their share price sensitivity to environmental issues; and to have stated that their statutory auditors have made explicit reference to environmental issues during the audit.

The likelihood of the company making environmental provisions in the future was related both to the company's practice of tracking environmental expenditure and to the apparent concern of the auditors with environmental issues. It would, of course, be difficult to be certain about the cause and effect that is in operation here.

Position of firm

Finance directors were also asked about how they perceived the environmental agenda to be affecting the relative position of their firm, their industry and the complacency of companies in general. Finance directors who believed that their company was likely to be affected unfavourably, either in absolute terms or relative to the industry, were more likely to believe that companies in general were complacent about the issues, and *vice versa*.

Actual and potential expenditure

Having incurred significant environmental expenditure, a finance director is more likely to track it in the chart of accounts but to be ambivalent about measurement difficulties. Such finance directors are also more likely to believe that they have made reference to environmental matters in the statutory financial statements. The more intensely the principal driver for future environmental expenditure is perceived to be legislative the more likely they are to believe that the environmental agenda will affect them adversely. There are signs that they are more likely to believe that it will affect their relative standing in the industry. The finance directors stated that they are more likely to have disclosed or be intending to disclose in the financial statements when the anticipation is that the company's relative standing in the industry will be favourable.

From these, and other observations, we are led to confirm tentatively our initial supposition that there is a very wide spread of activity in larger companies but that it is possible to offer an informed speculation about the characteristics of the minority of leading edge organisations. These characteristics seem to be:

- involvement with a programme of environmentally related spending;
- an awareness of potentially difficult legislation;
- a concern for the relative position in the industry;
- an active dialogue with informed financial auditors;
- an active disclosure policy; and
- an awareness of the importance of the views of the financial community.

In broad terms, where a finance director gave a high priority to one of these factors there was also a higher probability that other factors would be given a high priority. These are not the conclusions which would be expected from previous work. The emerging homogeneity of the leading companies, and the gap that these companies are creating between themselves and others, perhaps goes some way towards explaining the diversity of views we find.

Industry effect

Whilst the stated responses on levels of past and potential expenditure did appear to be broadly correlated with industry sector, not all of these characteristics of 'excellence' or at least 'better than most' were apparently industry specific. Given the importance and high profile that, for example, the chemical industry has given to environmental issues, it would not have been surprising if all these 'excellent' companies were chemical or chemical related in some way. This was not the case. However, it did continue to seem likely that industry sector was playing some part in the responses, in contrast to the previous findings of Bebbington *et al* (1994). We, therefore, examined the industry issue in further detail.

The responses of finance directors were split into two categories depending on whether they worked in environmentally sensitive industries or not. On this basis the environmentally sensitive comprised 33 companies in textiles, food and drink, engineering, electronics, processing, chemicals, manufacturing and aerospace. The 'less environmentally sensitive' comprised 26 companies in services (including

financial services), retail and construction. This is clearly an arbitrary split in that all industries have significant environmental impacts. The emphasis here, though, is on the industry's current exposure to such matters as significant legislation and public pressure. For practical purposes, however, such a categorisation was the only way in which some light could be shed on the industry factor, although such combining of groups might make the analysis less reliable. The results seem to be broadly in line with previous expectations and we find the categorisation, therefore, plausible.

We found that the environmentally sensitive companies were more likely to have incurred more environmentally related expenditure, both capital and revenue, and to expect to do so in the next few years. We also noted that those finance directors who saw their companies as more environmentally sensitive were more likely to have a similar pattern of past and future expenditure. Of particular importance, however, is that there was no correlation between the industry grouping we have described and the finance directors' views on the sensitivity of their company. This confirms our initial view that culture is as significant a factor in determining environmental response as the industry sector of the organisation. Only on two other areas did this industry grouping produce statistically significant results. The results suggest that finance directors in the 'environmentally sensitive' industries are less likely to track environmental expenditure and more likely to be in favour of a financial reporting standard on environmental issues. A summary of these results is shown in figure 6.1

Views on regulation of financial accounting

Four of the questions in the questionnaire were extracted from the ASB's discussion paper *Provisions* (ASB, 1995) and the results showed a significant level of support for the new proposals. Only on the final question, which concerned discounting, was a significant proportion (34%) undecided.

There was broad support for the development of a financial reporting standard. This confirms our observation through other research of a slow but definite change of attitude in this area.

Figure 6.1 Finance directors' views on financial accounting for environmental issues (1 = strongly agree; 5 = strongly disagree)

Question asked	Mean Response	Standard Deviation
A provision for the costs of remedying past contamination should be recognised only at the time that the entity becomes obliged, legally or constructively, to rectify the environmental damage.	2.86	1.20
Environmental expenditure should be capitalised if and only if the expenditure provides access to future economic benefits.	2.37	1.16
A full provision for abandonment or decommissioning work that the entity is obliged to undertake should be recognised at the time that the environmental damage is inflicted and this provision should be capitalised and amortised over the periods that will benefit from the use of the contaminated facility	2.54	0.97
An amount recognised as a provision for abandonment or decommissioning costs should be discounted where this (<i>ie</i> discounting) has a material effect.	2.85	0.93
A financial reporting standard should be developed to deal with the financial impact of environmental issues.	2.98	1.04

This continuing level of diversity is again suggested in the responses to the likelihood of environmental provisions where 23 expect to be creating environmental provisions in the next five years. There is a suggestion that the stronger support for these developments comes from those industries which are more typically thought of as environmentally sensitive and from those companies which are, apparently, more environmentally aware. This tendency for the apparently better informed to support movement in this area suggests a stronger belief in these issues than pure numbers, or indeed the business press, might lead us to believe.

Responses of the environmental managers

Questionnaires were sent to 200 randomly selected company environmental managers. Seventy-five usable responses were received (37.5%) making this, again, a better than average response rate. As the IEM undertook the sampling from their membership list, we have less information by which to assess either sample or response bias. It seems likely that the presence of a member of the IEM within a company indicates a more environmentally aware organisation and, as a result, the respondents are representing companies which are, as a whole, further advanced on issues of environmental management than is the case with the sample of finance directors.

The principal interest in the responses of the environmental managers within this project is as a means of comparison with the responses of the finance directors. As was the case with the finance directors, the responses reflected a wide diversity of views and experiences. There were, as there had been with the finance directors, broad correlations between views about recent expenditure and expectations about future environmental expenditure. Similarly, the activities of the auditors and the tracking-of environmental expenditure both seemed related to disclosure in the financial statements.

In general terms, there did not appear to be major differences in the direction of the views of the finance directors and the environmental managers. The environmental managers were asked for their views on accountants and these are shown in figure 6.2.

Figure 6.2 Environmental Managers' views of accountants
 (1 = strongly agree; 5 = strongly disagree)

<i>Question asked</i>	<i>Mean Response</i>	<i>Standard Deviation</i>
Companies' accountants are aware of environmental issues and their financial implications	3.15	1.01
Environmental managers are assisted in achieving their goals by the actions of accountants	3.22	0.98

Whilst, in general, the environmental managers were not impressed by the finance directors only 40% were openly critical and between 23% and 31% were actively complimentary. That speaks of a higher level of integration and cooperation than previous surveys and our interviews would have led us to expect.

Comparing responses from finance directors and environmental managers

The common questions asked of finance directors and environmental managers and a comparison of mean responses is provided in figure 6.3.

Figure 6.3 Comparison of finance directors' and environmental managers' responses
(1 = Not at all; 5 = To a great extent)

<i>Question asked</i>	<i>Finance directors</i>	<i>Environmental managers</i>	<i>t-stat</i>
Do you regard your company as being sensitive to environmental issues?	4.07	4.23	-
Are you aware of significant environmentally related costs that your company has incurred in the following (overlapping) categories over the last three years?			
Capital?	2.92	3.72	**
Revenue?	3.00	3.53	**
Legislation driven?	3.19	3.53	**
Consumer driven?	2.27	2.48	-
Do you expect significant environmentally related costs to be incurred by your company in the following (overlapping) categories over the next three years?			
Capital?	3.12	3.92	**
Revenue?	3.12	3.33	-
Legislation driven?	3.40	3.81	*
Consumer driven?	2.68	2.78	-

* = statistically significant at 5%

** = statistically significant at 1%

- = not statistically significant

Figure 6.3 Comparison of finance directors' and environmental managers' responses (continued)

(1 = Not at all; 5 = To a great extent)

Question asked	Finance directors	Environmental managers	t-stat
Do you expect the environmental agenda to influence your overall financial position over the next five years?			
Favourable?	2.10	2.62	*
Adversely?	2.84	3.13	-
Favourably relative to other firms?	2.13	2.74	*
Adversely relative to other firms?	2.00	2.35	-
Do you separately track environmental expenditure in your chart of accounts?	1.80	2.38	**
Do you think the problems of definition would render such separate definition pointless?	2.89	2.63	-
If applicable, do you think your quoted share price is sensitive to environmental developments?	1.79	2.55	**

Figure 6.3 Comparison of finance directors' and environmental managers' responses (continued)*(1 = Not at all; 5 = To a great extent)*

Question asked	Finance directors	Environmental managers	t-stat
Have you made reference to environmental issues in your financial statements?	Yes: 26 No: 33	Yes: 30 No: 25	-
If not, do you intend to do so within the next three years?	Yes: 5 No: 20	Yes: 17 No: 5	**
Companies in general are complacent in their attitudes towards possible environmental liabilities	2.70	2.89	-
The financial community is concerned about environmental issues	2.54	2.59	-
Companies' environmental managers should keep the accounting personnel informed of likely environmental liabilities arising from new legislation	1.64	1.59	-
Environmentally related expenditure should attract special taxation incentives	2.24	1.73	**
Have your financial auditors ever made explicit reference to environmental issues?	Yes: 13 No: 45	Yes: 15 No: 29	-
Have you ever sought advice on environmental issues from your financial auditors?	Yes: 7 No: 52	Yes: 4 No: 46	-

* = statistically significant at 5%

** = statistically significant at 1%

all tests were two tailed.

If we had expected finance directors and environmental managers to have diametrically opposed views on all issues we would have been disappointed. Whilst their views on many of the important issues are significantly different they share similar views on some issues and, even where there are significant differences, these sometimes point in the same direction. In fact, we can conclude that the differences between the views of the finance directors and the environmental managers are only important in those industries not traditionally associated with an advanced environmental response. Other industry specific influences were not detected.

When an industry by industry analysis is undertaken many of the statistically significant differences between the two groups disappear. In particular, there are no statistically significant differences between finance directors and environmental managers in the sensitive industries. This is a potentially important, and certainly unexpected, finding.

The most obvious area of agreement is on the importance of the green consumer. In retrospect, the word 'customer' rather than 'consumer' would have been more helpful. In using the latter word, we cannot infer that the responses are also a dismissal of the claims for the importance of the supply chain impact on environmental policy where corporate customers as opposed to end consumers are involved. Finance directors and environmental managers do, with few exceptions, see little financial environmental impact arising from the efforts of consumers. This is a view which was evident in the interviews and is supported widely by surveys of the issue.

The groups are both of the opinion that their companies are environmentally sensitive. They are similarly of the view that recurrent costs will rise. They believe that their firms will not be affected favourably by the environmental agenda but that they are unlikely to be affected adversely relative to other firms in their industry. In general, they do not see identification as an impediment to measuring and reporting environmental expenditures.

The differences between the two groups are, however, frequently significant and nearly always in the same direction. The overall picture is the one we might have expected, namely that environmental managers

are rather more exercised by the economic consequences of environmental issues than are the finance directors. Drawing from figure 6.3, we can explore this a little further.

Generally speaking, the environmental managers see environmentally related costs as more significant than do finance directors. We had to use the word 'significant' because it seemed that few environmental managers would understand the word 'material' in the same way as do finance directors. It was materiality that we were after. We would generally expect an environmental manager to have a lower 'significant cost' threshold than an accountant. Whilst both groups agreed that future significant cost is likely, environmental managers saw this as more significant than finance directors. Both observations seem plausible and whilst they are in the direction that was hypothesised at the start of the project, the difference between the two groups is not always as stark as might have been anticipated.

The two groups have some, smaller, differences in their estimation of how the future environmental agenda will affect their companies. Finance directors are more sanguine, generally expecting the firm to suffer neither favourable nor adverse impacts. The environmental managers seem less sure and, indeed, seem to believe that their firms will be affected adversely. The difference in this particular case is not, however, statistically significant.

Another striking difference between the responses of the finance directors and the environmental managers relates to disclosure. It appears that the environmental managers were under the misconception that the statutory financial statements and the annual report were identical. Whilst only 20% of finance directors whose companies do not currently disclose environmental data believe that their companies intend to disclose in the future, the corresponding figure for the environmental managers was 74%. There are many possible explanations for this including the greater importance that environmental managers attach to the environment and their greater optimism about new developments and initiatives. Similarly, environmental managers are much less negative about the environmental sensitivity of their company's share price.

Finally, we also found that environmental managers are much more positive about the notion of environmentally related expenditure receiving tax breaks, a matter much mooted throughout Europe and North America. One explanation which seems particularly plausible, in the light of all that has gone before, is that the finance directors see environmentally related expenditure as just another cost which is no different in principle from any other sort of cost. Why then should it receive special treatment? To the environmental manager, environmentally related expenditures are special and qualitatively different in nature. They are more important and more difficult to determine than other costs. Accordingly, environmental managers might be expected to be noticeably more positive about tax incentives in this area.

Therefore, the initial and central question of whether environmental managers see the environmental agenda in a qualitatively different way than do finance directors is broadly supported, but not with as drastic a difference of opinion as we might have expected. Indeed, in some areas the two groups show an approaching commonality of views for which it is feasible to find plausible explanations.

Conclusions

There is a gap between the views of finance directors and environmental managers but the gap is not as simple nor as large as we might have assumed. Despite this, we believe we can conclude that there is some way to go yet for the finance directors and the financial statements to 'catch up' with the environmental agenda. We conclude this because:

- environmental management is increasingly the realistic and business oriented face of environmentalism;
- the finance directors show increasing support for guidance; and
- the responses to questionnaires must be taken to be representative of the more advanced companies.

Leading edge companies, influenced by a combination of internal characteristics and external factors, notably industry sector, are expanding the gap between the state of the art in environmental response and the environmental performance of the rest of UK business. It would appear that if a company is undertaking one important area of activity *eg* tracking expenditure, talking to its auditors, it is also undertaking other important activities, *eg* planning to create provisions and including disclosures, in its financial statements.

Despite this, it is apparent that the situation underlying corporate environmental response and associated developments in accounting is a complex one. Perhaps this is inevitable.

Endnote:

¹ Professor Gray is a member of IEM and Chair of the IEM's Educational Advisory Committee.

CHAPTER 7

INTERPRETATION AND LOOKING TO THE FUTURE

The research began with a series of relatively simple questions. An extensive review of literature, pronouncements, and law, plus four separate but integrated elements of research have produced some insights but the situation would appear to be too dynamic and complex for simple answers. In this chapter we synthesise what appears to be the emerging consensus.

Overview of results

Chapters 1 and 2 reviewed a selection of the appropriate literature and prior research and concluded it was reasonable to suggest that:

- there was a potential cause for anxiety in the difference between concerns expressed by, *inter alia*, environmental managers and the lack of environmental manifestations within financial statements; and
- the legislative environment facing UK business was complex, developing and far from clear in its likely impact on the financial activity of companies.

Our survey of published annual reports from large Scottish companies confirmed a lack of financial disclosure on environmental matters and a low level of explicit recognition of the financial aspects of the environmental agenda. In this, as in the more general environmental disclosure in the annual reports, the Scottish companies seemed to be broadly in line with the behaviour of large UK companies. In addition, these results are very broadly in line with surveys of voluntary environmental disclosure in other developed countries.

The interviews produced many interesting insights but did little to offer clear explanations as to why some companies were significantly more active than others in developing their accounting mechanisms to respond to the environmental agenda. We identified two groups of companies: a small group of leading edge, proactive companies; and a large group of companies who seemed content to respond to changes as they occurred. We speculated on the existence of five categories of environmental response (figure 5.3).

The environmental situation facing companies is complex with respondent views spanning the whole spectrum of possible reactions to the environmental agenda. This is exacerbated by a far from clear legislative situation and some circumstantial evidence of a significant degree of inconsistency in the way in which the regulators apply the legislation.

The cost implications facing companies do not, on the whole, appear to be trivial but, for the majority, they are yet to become material. We found no examples of major asset impairment problems but did come across three illustrations of going concern problems arising from environmental legislation. Thus the potential business risks arising from the environmental agenda can be exceptionally important.

Our conclusions from the interviews are that: location and processes; organisational attitudes; and to a lesser extent industry, were the principal determinants of both financial environmental impact and environmental response by both environmental managers and finance directors.

In addition to the complexity, and, at times, opacity, of the legislative regime facing companies, it seems to be the case that legislation is arriving slowly and allowing well managed companies to cope with changes within the normal business cycle. The dramatic leaps forward that we had expected are, therefore, not happening, except in exceptional cases.

Finally, the postal questionnaires gave some reassurance that our tentative conclusions seemed to be pointing in the right direction. There was less difference between the opinions of the finance directors and the environmental managers than we had expected. The difference was notably smaller for responses from the more environmentally sensitive industries than for industry as a whole. There is more than circumstantial

evidence that finance directors and environmental managers are, at least in the leading companies, keeping each other informed of progress and of emerging issues (see figure 6.2).

Here again we saw hints of a separation between the leading edge companies and the rest. We gained some insights into emerging best practice in environmental management and accounting. The leading finance directors are talking to their environmental managers, discussing matters with their auditors, tracking environmental expenditure and anticipating future costs and liabilities. Neither finance directors nor environmental managers seemed especially anxious about the relative impact on their company but most recognised that future environmental expenditure is likely.

Overall, we were left with little doubt that there needed to be some movement by finance directors but that this was very unlikely to happen unless some rules or guidelines were formulated.

Looking to the future

We can conclude that the gap between the current environmental response of companies and where they need to be to cope with the current environmental agenda is not as great as we had initially assumed. However, there is an important gap between the leading companies and the majority of companies that must be addressed if the UK corporate sector is not to find itself faced with a great deal more in the way of corporate risks and going concern problems. The first task seems to be to bring the majority of companies up to the state of best practice, in both environmental management and in accounting. To achieve this aim will require concerted effort and specific rules, from the professional accountancy bodies.

Problems of deriving 'should' from 'is'

The research reported has taken a descriptive stance¹. Now we wish to suggest how the accountancy profession, and the ASB, should move forward. The challenge is to move from 'is' to 'should'.

First, we wish to respond to the frequently voiced challenge to academics to engage with and advise the professional policy makers, however difficult and daunting that might be². In essence the academics' traditional role is to seek to understand a particular situation. In doing so, the academic should be better informed than most about the issue in question. The next step should be to seek to influence the practice which, more often than not, the academic is seeking to criticise. Failure to do so is not only a lost opportunity for sharing a reasonably well informed opinion but is also an avoidance of the broader political academic role and perhaps even of the academic's moral duty³.

One can move from 'is' to 'should' only by attempting to make the attendant value judgments explicit. Within the accountancy profession in its broadest sense there are widely different views on environmental issues, financial reporting and approaches to research. These views reflect inherently a wide range of value judgments. The present research has, consequently, attempted to remain within current accounting orthodoxy in order to make the research as widely accessible as possible. In what follows, the different value judgments will be brought out more clearly by making recommendations in a series of layers which reflect, as far as possible, different assumptions about environmental issues and the role of financial accounting therein.

For example, acceptance of the centrality of sustainability; or a willingness to believe and engage with the current preponderant positions of financial reporting; or a recognition that the ASB must be realistic and not suggest things which business will not accept; are all value judgments. The views of the commentator on such matters will lead to very different suggestions as to how environmental issues might be recognised in the accounting process. As an example, a recommendation to tighten up contingent liabilities implies that the present financial accounting framework is basically sound and that either there is no environmental crisis or that such a crisis can be addressed through current accounting orthodoxy. A deeper green view would see contingent liabilities as virtually irrelevant, given the size of the problem, and identify current accounting orthodoxy as the very heart of the problem. From such a view, conventional accounting is part of the problem and cannot be part of the solution. These are incompatible situations⁴.

The following suggestions are presented as a spectrum of recommendations ranging from the immediately practicable (in a conventional accounting framework) and moving towards a greater emphasis on sustainability and accountability to society.

Recommendations for action

Dissemination of best practice

As the research progressed, the distinction between leading edge organisations and others seemed increasingly relevant. Environmental issues are unlikely to disappear from the business agenda and, indeed, are very likely to grow in importance. If one role of the accountancy profession is to ensure that UK business should survive and prosper, it seems unavoidable that finance directors should seek to ensure that their own organisations emulate best practice as quickly as possible.

Nobody, it seems, is able to predict with any certainty where and when the environmental axe will fall. Most informed opinion does, however, seem to be in little doubt that such an axe exists and will, indeed, fall in due course. The best way that an organisation can avoid the attendant nasty surprise is to match the best practice, see figure 7.1 for some of its elements. We believe that the accountancy profession must find a means of ensuring that all finance directors are made aware of best practice and are strongly encouraged to implement it.

Figure 7.1 Elements of 'best practice' as accounting responds to the environmental agenda

- Consider the organisation's definition of environmental expenditure;
 - Start to record, perhaps in relatively simple ways, the principal categories of environmental expenditure relevant to the organisation;
 - Consider other classifications of environmental expenditure as offered by, for example, CICA;
 - Talk to one's financial auditors about such issues;
 - Ensure that the accountants and environmental managers are meeting and sharing information regularly;
 - Actively seek out provisions and contingent liabilities for the relatively near future;
 - Expect significant environmental expenditure in the next few years;
 - Develop a good strong relationship with your environmental regulator(s);
 - Know the company's exposure to the law and provide for it;
 - Produce a substantive report on environmental issues for the annual report and disclose 'real' numbers about financial impacts;
 - All merger and acquisition activity must be subject to environmental audit;
 - Look for cost savings, be aware of fiscal changes, expect some asset impairment, keep a weather eye out for going concern problems.
-

Establishing provisions

The predominant response of finance directors was in favour of the recommendations in the ASB's discussion document. Our suggestion is that the ASB could draw further evidence from the research to support a mandate to proceed on this issue.

We see support for the discussion paper as conditioned by the underlying value judgments of the respondent. For example, a commentator having a slightly 'less light green' perspective would see environmental costs as qualitatively different from other costs and, amongst other things, would have the gravest doubts about the wisdom of discounting environmental costs. A widespread view in the environmental literature is the argument that one source of environmental problems is the tendency to discount the future and say, therefore, that it is less

important. Whilst this may be good economic sense it leaves future generations to collect the bill for past environmental irresponsibility. We return to this below in more detail but it colours our views on the development of a financial reporting standard.

Developing a Financial Reporting Standard - 1

The results from the survey reported in chapter 6 give some very slight support for the development of a financial reporting standard on environmental issues. This does suggest some potential, if slight, conflict with other research findings in which auditors are marginally opposed to such a standard⁵. In neither case, however, have the 'users' of the financial statements been consulted and evidence here, although sketchy⁶, suggests that shareholders and the financial community in the UK are, as yet, not deeply exercised by these issues⁷. If we consider that environmental costs are not qualitatively different from other costs and we consider that respondents to these surveys are informed about environmental issues then we infer that there are few major issues of current concern which require a financial reporting standard. The most persuasive element here is the remarkable similarity between the views of the environmental managers and the leading edge company finance directors. In general, the environmental managers do not appear to see a matter of desperate urgency and so, we could infer, the agenda can be allowed to unfold for a little longer without taking drastic action.

This does not mean, however, that matters can be ignored. If the above analysis is thought to be appropriate, there does seem to be a case for a reporting guideline. This could bring together the 'best practice' issues in figure 7.1, synthesise the leading guidance from, for example, CICA and the EU's Advisory Forum, restate the provisions proposals in the ASB's discussion paper, start the process of tightening up other matters such as abandonment costs, contingent liabilities and appropriations for environmental 'shocks', and make an important contribution in flagging up the importance of going concern problems.

The broad elements that comprise current best practice are shown in figure 7.2 and a summary of the EU's Accounting Advisory Forum's recommendations are shown in figure 7.3⁸.

Such a guideline would also help accountants if it suggested that companies actively think about separate identification of environmental expenditures and asset impairments within the notes to the accounts⁹.

We believe that such a guideline would be widely welcomed by the accounting and financial communities, would take the awareness of, and practice in, accounting for environmental issues another step further and would, as far as we can assess, not run counter to the accounting and related research evidence currently available.

Figure 7.2 Some recommendations for a guideline on a synthesis of financial accounting issues arising from the environmental agenda

- Recommend the adoption of best company practice (see figure 7.1);
 - Synthesise best practice recommendations from the professional bodies (*eg* CICA and the EU's Advisory Forum) on definition and treatment of environmental costs;
 - Bring together relevant guidelines and standards from elsewhere, including provisions, contingent liabilities and appropriations to reserves;
 - Emphasise the potential of going concern problems;
 - Itemise and describe the sorts of other risks that are inherent in the environmental agenda and how they might be identified and 'managed';
 - Suggest voluntary disclosure of environmental expenditure and separate identification of provisions, liabilities, contingencies and appropriations;
 - Start the process of tightening up rules on contingencies, abandonment costs, decommissioning costs and recognition criteria for environmental impacts.
-

Figure 7.3 Summary of the EU's accounting advisory forum's recommendations on financial environmental reporting

General:

Only disclose environmental issues in the annual report and financial statements if they are material.

Balance sheet:

Environmental provisions should be shown as 'other provisions' and separately disclosed if material.

Notes relating to the accounts:

These should include, with respect to environmental issues: valuation; extraordinary items; disclosure of provisions; contingent liabilities; an analysis of environmental expenditure undertaken; amounts of environmental expenditure capitalised; costs associated with fines, penalties, compensation *etc* disclosed separately and direct reference to other sources of environmental information such as an environmental report.

Annual report:

- Description of the environmental issues relevant to the financial position of the company and its response to them;
 - company policy on environmental protection;
 - an indication of government incentives and grants;
 - a statement of compliance with legal standards;
 - reference to any separate environmental information such as an environmental report.
-

Developing a Financial Reporting Standard - 2

For some, however, environmental issues are qualitatively different from other issues in that:

- they are likely to be extremely significant in the relatively near future;
- they can produce massive liabilities in a very short space of time (see, for example, Superfund in the USA and the going concern examples discussed earlier);
- they are not a 'fad' issue which can fade in and out of the accounting and business agendas. They are a manifestation of a very real change in the world in which we live;
- they are morally different in that avoidance of environmental responsibility affects the prospects of life; and
- the very existence of a potential for major ecological disaster must, by definition, call into question the free market liberalism upon which most accounting practice is predicated and justified.

In these circumstances, a very different approach is required to accounting. One short term step would be to adopt an approach similar to that recently undertaken by the Danes¹⁰ and the Dutch¹¹, and long recommended by the United Nations, and to require a separate statement on environmental matters in the audited annual report and to specify the elements of such disclosure, but without specifying the detailed calculation rules which should underpin it.

This, the Danes seem to have discovered¹², advances matters significantly but without hitting the problems of either making environmental disclosure a minimum or falling foul of arguments over detailed accounting measurement rules (see figure 7.4).

Figure 7.4 Recommendations for a reporting standard based on the assumption that environmental issues are qualitatively different from other issues

- Lobby the government to adopt a Danish style addition to company law. *The Danes' Green Reporting Law* requires:
 - General company information including industry sector;
 - The directors' report must cover a range of environmental information and explain why the information was selected;
 - A Resource Consumption Report;
 - A statement as to whether or not the information is audited and, if so, by whom (the law allows for the possibility of mandatory auditing);
 - Lower the materiality threshold for environmental issues;
 - Require disclosure of all environmentally related penalties, fines and legal cases in progress;
 - Require cash trust funds for decommissioning, abandonment and remediation liabilities to be established as soon as they seem probable;
 - Lobby government for further compulsory environmental reporting.
-

Such an approach could be further enhanced, if one were convinced of the essential qualitative difference of environmental costs, by such means as:

- reducing the materiality threshold for environmental recognition and disclosure;
- lobbying for environmental reporting to be mandatory and established in company law;
- requiring cash trust funds to be established by the companies, and other organisations, concerned to cover remediation, abandonment and decommissioning costs to avoid liquidated organisations passing costs which the shareholders should have borne onto society¹³; and
- avoiding the discounting of future liabilities on the widely discussed traditional environmental grounds.

It is at this point that the question could usefully be asked of whether we might be less concerned by what the users and preparers 'want' and rather more by what they, and other stakeholders, 'need'. At a minimum, we see accounting as having a potential to educate the financial community on environmental issues rather than, as currently seems to be the case, waiting for that community to decide that environmental issues are sufficiently significant that they will affect their income. This is related to the 'social constructionist' role of accounting and is also related to the moral argument that shareholders and the financial community really should be aware of the environmental (and social - see below) damage that has been the real price of their dividends. When a major multinational can be hauled through the public arena for environmental and social irresponsibility and yet its share price rises, a minority of us consider that the values of the market are wrong, even reprehensible.

Other matters which would be welcomed¹⁴ by society as a whole could include a more immediate recognition of potential liabilities. The overwhelming difficulties of defining such matters and the virtual impossibility of gaining any cooperation from companies on such issues suggest that a regulatory process based on consensus could make little progress in addressing such issues. They remain matters of concern and the independent, campaigning organisations, such as Greenpeace, Ethical Consumer, New Economics Foundation, Council on Economic Priorities and others¹⁵, will continue to fulfil an important role in pursuing such issues.

Accountability and environmental reporting

It becomes apparent that there is a degree of blurring between the extent to which financial statements and the annual report can reflect environmental issues and the principles of wider environmental reporting itself. To draw a distinction may well be unnecessarily arbitrary if one takes the perspective that reporting should be driven by social and environmental accountability. Such a view is gaining increasing recognition in many quarters. In addition to the Danish and Dutch initiatives referred to above, the European wide development of a reporting requirement within EMAS has effectively enshrined the principle of wider environmental accountability.

Therefore, we would also like to see the accountancy profession putting its weight behind a move towards more extensive, mandatory, environmental reporting, that is extending the Danish approach to environmental disclosure. This need not necessarily be in the annual report.

There are now so many codes of voluntary practice in this area (from the United Nations, ACCA reporting Awards Scheme, ACBE, the CIA, *etc*) that a further code would be a waste of time. Whilst these codes have perhaps encouraged the leading edge companies to develop their reporting, it is quite clear that reporting remains in the minority and will continue to do so until such reporting is mandatory¹⁶.

Developing accounting education for environmental issues

The medium term problem seems to lie, not with the technical matters of establishing guidelines on whether and how to account for environmental issues, but rather with the increasing evidence which suggests that finance directors seem reluctant to take initiatives and to experiment¹⁷. There is both circumstantial and direct evidence of this impression in the foregoing chapters. There is sufficient information on environmental and related issues which is easily available in the public domain that accountants, if they wished to, could access and experiment with. Very few accountants do this. In part, the obvious reason is that nobody rationally looks for more work, but we believe that this is only part of the issue. Another plausible explanation is that accountants are already overloaded with rules and regulations and simply cannot go looking for initiatives. If this is the case, then perhaps there is something wrong, not just with accountants' training, and as in many other countries, their education and training, but with the regime of accounting regulation. We believe these issues may be becoming critical and look forward to further exploration of them.

As a first step, it would be a relatively simple matter to make mention of environmental issues in professional examination syllabi¹⁸ and to require explicit recognition of the relationship between accounting and environmental issues in the curricula of those universities and colleges seeking professional accreditation for their degrees.

Accounting and educating for sustainability

The dominant public policy goal for the foreseeable future will be, and indeed must be, sustainability. Sustainability is a state¹⁹ that might be achieved through sustainable development which is most typically defined as:

... development which meets the needs of the present without compromising the needs of future generations to satisfy their own needs.
(United Nations WCED, *The Brundtland Report* 1987)

Sustainable development thus comprises both the needs of the present and the needs of the future and thereby involves both environmental issues, often called 'eco-efficiency', and social issues, often referred to as 'eco-justice'. Environmental accounting may be able to contribute something to the eco-efficiency issues. It is part of the role of social accounting to address the eco-justice matters.

A number of the research team are convinced that this is where accounting practice must head²⁰. Experimentation here is essential²¹ because we are a long way from having any fully tested, defensible and practicable methods.

Methods do exist, such as CSEAR's sustainable cost calculation statement, but need more work, discussion and support. The sustainable cost is based on the notion that a company must maintain both natural and man made capital. This sustainable cost can be measured by an assessment of the notional amount a company would have had to spend if it had been sustainable. The idea is developing and a case study experiment is under way with a New Zealand company. The Scottish Office is currently funding experiments with the ideas in the agricultural sector²².

As an interim measure, we propose a commitment to greater transparency and accountability that seeks to inform stakeholders about the social and environmental consequences of corporate success. This in turn would take us towards a greater awareness of the issues faced by stakeholders. Thus an explicit and fully informed statement from the accountancy profession on the exigencies of sustainability, possibly risking unpopularity but taking a strong moral position, would be an especially welcome and useful development.

Future directions

Companies, accountants, and regulators of financial reporting are faced with a conundrum. This conundrum centres on how one judges, first, the current and potential state of the environmental agenda and, second, the extent of deterioration in the actual state of the physical and social environment. Most companies and accountants appear to be following a 'wait and see' strategy. Most appear to believe that there is little or nothing in the environmental agenda to challenge a 'business as usual' assumption. If one insists on subscribing to such a view, and a number in the present research team are of this opinion, then there is still work to be done in bringing companies and accountants up to 'best practice' and, probably, lobbying for mandatory environmental disclosure. In our view voluntary initiatives, whilst excellent for experimentation, simply never work as a means of gaining widespread compliance. If one is less persuaded by this optimism²³, we would remind readers of the statement from the environmental manager of a major utility company. This research has been committed to gathering the views of practitioners and industry and leaving the last word to an informed practitioner seems appropriate:

When it all comes down to it, this is really not going to make a difference. I can get quite depressed if I think about the state of the world and where we are going in the future ... the West is not changing its ways and, at the same time, is exporting its attitudes to the rest of the world ... the big questions are simply not being addressed.

Endnotes:

¹ It is also increasingly well established in the accounting literature that 'description' is never far from personal (normative) preferences and biases, (see, for example, Tinker *et al.*, 1982). The essential argument is that in choosing to study any particular phenomenon with any particular method and approach one is reflecting a set of personal value judgments. This research has reflected (*inter alia*) an acceptance of an 'environmental agenda' distinct from the actual state of the environment, has accepted financial statements as taken for granted and has not offered any challenge to the current hegemony of either accounting regulation or current modes of business practice.

² See, for example, Whittington (1995) and Gray (1996).

- ³ See, for example, Sikka (1987), Sikka *et al* (1991).
- ⁴ See, for example, Gray, 1992.
- ⁵ These results are reported in the monograph for the ICAEW by Collison *et al* (1996).
- ⁶ The anecdotal evidence reported here and in Collison *et al* (1996) together with surveys of financial community views (see, for example, *Business in the Environment*, 1994) speak, broadly, of a community which is either blissfully unaware of the issues or which judges them to be relatively unimportant in the short run. Fortunately, there is some, although largely circumstantial, evidence that this may be changing. See, for example, Mueller *et al* (1996) and KPMG (1994).
- ⁷ That the users should be exercised is a different argument and is covered in the next sub-section.
- ⁸ At the time of writing we are still awaiting final guidance in the UK on the liability for contaminated land. The UK's emphasis on 'fitness for use', whilst it has implications for the resale value of land and does not remove liability for contamination of water courses, removes many of the immediate anxieties about and potential for contaminated land liabilities.
- ⁹ We do not see any overwhelming evidence on the need for industry SORPs. It would not surprise us, however, if the chemicals industry were to take this step. The oil and gas SORP, with its relatively relaxed emphasis on provision for abandonment, does not appear to offer any especially important hints for how general manufacturing industry might proceed on these matters. A significantly more prudent approach to all forms of abandonment by all industry relating, say to factory and plant abandonment, whilst perhaps desirable from some points of view (see later) is unlikely to command widespread support in the current legislative climate.
- ¹⁰ The Danish Law, 'The Green Reporting Law' was passed in June 1995 and took effect in January 1996.
- ¹¹ For the Dutch initiative see *Environmental Accounting and Auditing Reporter*, Vol.2, No.1, 1996.
- ¹² For an introduction to this matter see Lars Vedso's article in *Social and Environmental Accounting*, 16(1) April 1996 (pp7-8). A longer piece on the Danish situation is to appear in *Business Strategy and the Environment* by Pall Richardson to whom we are grateful for sight of an early copy of his paper.
- ¹³ Such an arrangement has been described by David Lascelles with regard to the nuclear industry privatisation in *The Financial Times* 5 June 1996 (p10). The principle behind the idea is little different from the current practice of requiring assurances (for example in the form of bonds) about financial viability and security of firms involved in environmentally sensitive work. The most obvious example relates to companies seeking planning permission for potentially environmentally sensitive activities, or wishing to obtain waste management licenses. Similarly, the principle is at work in the application of the UK Landfill Tax in which revenues are set aside for use by 'environmental trusts'.

- ¹⁴ We have not reviewed some of the more innovative attempts to develop financial accounts for the environment. The notable examples include BSO/Origin (Netherlands), Baxter Healthcare (USA) and Ontario Hydro's (as yet unpublished) attempts to value social and environmental externalities.
- ¹⁵ These sorts of activities are usually referred to as 'social audits'. For more detail see, for example, Gray, Owen and Adams (1996).
- ¹⁶ Some information on these codes of practice is reported in Gray *et al* (1993).
- ¹⁷ The results of Bebbington *et al* (1994) and Gray *et al* (1995a) suggest this conclusion strongly.
- ¹⁸ The ACCA examiner of financial accounting has made explicit reference to environmental issues in his/her report on the 1995 examinations.
- ¹⁹ Sometimes stated as 'treating the world as if we intended to stay'. Sustainable development might be thought of as the process which begins to move us away from our present levels of unsustainability.
- ²⁰ Although it is worth remarking that the more radical commentators argue that more accounting, being the thing which caused the problem, can only make the problem worse, consequently we need less accounting. For more detail on this and the other issues mentioned see, for example, Gray (1992), Gray *et al* (1993) and Maunders and Burritt (1991).
- ²¹ British companies seem more reluctant than those in many other countries to engage in such experimentation.
- ²² For more detail see, for example, Gray (1992), Gray *et al* (1993), Bebbington and Tan (1996) and Bebbington and Thomson (1996).
- ²³ A report on an international study of companies' views on sustainability is available in Bebbington and Gray (1995).

APPENDIX 1

A SUMMARY OF UK/SCOTTISH LEGISLATION CONCERNING ENVIRONMENTAL ISSUES AS THEY AFFECT BUSINESS¹

Impact of environmental law

The growth of environmental law affects industry in many ways. Some processes and activities which have been carried on in the past may no longer be permitted, there are costs involved in seeking the range of official permissions which may be required (fees, preparation of documents, delays) and costs in making sure that environmental standards are in fact observed (new equipment, new working practices, monitoring, reporting and recording to ensure compliance). Increasingly there is liability, civil and criminal, if things go wrong and pollution incidents occur. Moreover there is at present continuing uncertainty over the potential scope of liability for historical pollution and the cleaning up of contaminated land. The possibility of environmental liabilities or costs may form a major factor in a potential lender's assessment of whether a particular business offers a good risk or not.

The environmental attitudes of others can also have a big effect on a business as the requirements or preferences of customers, whether consumers or other businesses, may call for environmental standards above those set by the law. On the other hand, the experience of waste reduction projects *etc* demonstrates that there can be considerable savings available to those in industry prepared to subject their requirements for and use and disposal of resources to thorough examination (221 ENDS 15 (June 1993)).

The environmental performance of business is also subject to external scrutiny as never before. The various bodies charged with the enforcement of environmental law are being expected to take a more vigorous approach to using their formal enforcement powers, and their activities nowadays attract a previously unparalleled degree of interest. Moreover, the public, and hence pressure groups and rival businesses, is given access to information on environmental matters through the public registers which are an integral part of most regulatory regimes and through the operation of the Access to Environmental Information Regulations 1992 (SI 1992 No.3240) which implement the EC Directive (90/313) requiring open access to almost all officially held information on the environment.

It is also possible that there may be a gradual relaxation of the rules on legal standing so that it becomes easier for the decisions of regulatory bodies to be challenged in the courts by third parties. This has already occurred in England where pressure groups have been allowed to challenge the legality of such decisions (eg *R v Inspectorate of Pollution, ex parte Greenpeace Ltd.* (No.2) [1994] 4 All ER 329). The new provisions on statutory nuisance further allow individuals to initiate proceedings for a court order requiring those responsible to abate any nuisance, whereas under the old law such action was open only to local authorities (Environment Act 1995, s.107 and Sch.17).

Before considering in more detail the legal controls most likely to have an effect on business, some points of general application can be made. Firstly, this continues to be a time of great change in environmental regulation. Not only has there been a huge amount of new legislation in recent years, but the new provisions are constantly being amended, sometimes to adjust minor points of detail but sometimes in significant ways. Moreover, there is often a considerable delay between the legislation being enacted and it actually coming into force, so that it is difficult even for an experienced lawyer to state exactly what the law is. A striking example is that some key provisions on contaminated land in the Environmental Protection Act 1990 (*EPA 1990*) have been repealed without ever taking effect, while the replacement provisions in the Environment Act 1995 (*EA 1995*) have not yet come into force. The need to take account of measures agreed at the EC level adds further complexity.

One major change which has taken place in 1996 is the establishment of the Scottish Environment Protection Agency (SEPA)². This single body is now responsible for the pollution control functions previously distributed among local authorities, river purification boards and HM Industrial Pollution Inspectorate. This new body is intended to offer a more integrated, consistent and efficient approach to pollution control but, as it came into operation only in April 1996 and has yet to produce certain key policy statements, it is too early yet to say exactly how its creation will affect the way in which the law operates in practice.

A second general point is that most of the regulatory regimes are now intended to be self-financing (*eg* EA 1995, s.42). This means that significant fees have to be paid by those subject to these controls, *eg* in relation to Integrated Pollution Control there is a fee for initial authorisation and a fee for annual monitoring (for the effect on one company see 235 ENDS 5 (Aug.1994)).

Thirdly, the offences created by the modern environmental legislation can result in very substantial penalties, *eg* in relation to integrated pollution control there is a maximum fine of £20,000 on conviction in a summary court, without jury, with an unlimited fine available if the case is heard by a jury (EPA 1990, s.23). In practice the level of fines in Scotland has been fairly low, the £1,000,000 fine imposed on Shell some years ago by an English court remains an aberration, but increasing public pressure on regulators and courts to be tough on environmental crime means that it is likely that heavier penalties will be imposed in future, and some significant fines are now being imposed (*eg* several over £10,000 in relation to pollution of rivers with silt during the construction of the M74 (242 ENDS 47 (March 1995)) and £60,000 for a water pollution incident at Freuchie (252 ENDS 45 (Jan.1996))).

Fourthly, the offences also allow for the personal criminal liability of any director, manager or other officer of a company through whose own consent, connivance or neglect the offence has been committed (EPA 1990, s.157). The conviction of a senior executive may have serious direct consequences, fines as noted above and up to two years in prison, while the company may suffer both through the loss of senior figures

while in prison and indirectly as such incidents may affect judgments on whether the company or individual is 'a fit and proper person' for the purposes of some licensing regimes (see Waste, below).

Nuisance

At common law a landowner may be liable for harm or disturbance caused to the property of neighbours and others in the vicinity. In England and Wales, where dangerous activities (*ie* those which it is foreseeable will cause harm) are involved, compensation is on the basis of strict liability, *ie* liability without proof of negligence or any other form of fault, as discussed in the recent well publicised case of *Cambridge Water Co Ltd v Eastern Counties Leather plc* [1994] 2 AC 264. In Scotland a person must be found to be at fault, before being held liable, but the precise degree of fault required is uncertain; some cases suggest that simply continuing an operation which it is foreseeable would harm another will suffice, bringing the position here very close to the strict liability approach in England (*Kennedy v Glenbelle Ltd* 1995 GWD 7-398). Whatever the exact position, as environmental knowledge and awareness increase, it is inevitable that what was in the past accepted as reasonable will today or in the future be regarded as negligent and thus attract liability. Developments in the area surrounding a site may mean that activities which did not constitute a nuisance may be regarded as a nuisance at a later date. For example those living in a new residential development may be disturbed whereas no disturbance was caused to previous industrial occupiers of the site.

New statutory nuisance provisions have just come into effect (EA 1995, s.107 & Sch.17). As before, local authorities are under a duty to inspect their area for any premises or works injurious to public health or otherwise causing a nuisance, and are able to start court proceedings requiring the person responsible, or the owner or occupier, to stop the nuisance and to take any necessary remedial action. The new provisions provide for a more modern definition of 'nuisance', a swifter enforcement mechanism for the local authority, and for private individuals aggrieved by a nuisance to initiate action without involving the local authority.

Integrated pollution control

A new system of Integrated Pollution Control was created by Part I of the Environmental Protection Act 1990. This applies to processes and substances listed in the Environmental Protection (Prescribed Processes and Substances) Regulations 1991 (SI 1991, No.472, as amended), *eg* various forms of metal production and processing, chemical production, pesticide production. Under the Act it is an offence to carry out any of the listed activities without an authorisation from SEPA. In granting authorisation all forms of emissions will be considered, and the best practicable environmental option must be sought.

Features of the regulatory scheme are that the conditions in an authorisation must be reviewed at least every four years, and authorisations can be varied or, where there is a risk of imminent pollution, activities prohibited regardless of whether the terms of the authorisation are being observed or not. More significantly, a condition of all authorisations is that the best available techniques not entailing excessive cost (BATNEEC) must be used to prevent, or minimise the effects of, the release of substances which might harm the environment. This imposes an obligation to make sure that the equipment and the way in which it is being operated is being constantly reviewed to make sure that the best available techniques are being used, with the consequence that the emergence of improved technology will require the upgrading of existing plant and operating techniques. These features together mean that it is impossible to predict the lawful life of particular equipment or processes, and there is no guarantee that a process which meets the standards for authorisation one year will do so the next.

There are proposals for a system of integrated pollution prevention and control at the EC level, but these remain some way from being finalised.

Air pollution

Numerous processes and substances covered by Part I of the Environmental Protection Act 1990 were subjected to Local Authority Air Pollution Control. This meant that the same provisions applied as for Integrated Pollution Control, but operated by the local authority and looking only at emissions to air. These matters now fall under the control of SEPA, reducing any differences in practice.

The Clean Air Act 1993 consolidates and continues the existing controls on dark smoke, chimneys, grit and dust. In order to reduce pollution, standards are set for certain products, *eg* specifying the levels of emissions from vehicles or the lead or sulphur content of motor fuels.

Activity at the EC level is concentrated on setting air quality standards, specifying the maximum permitted concentrations of particular substances in the air. These standards do not have any immediate impact on business, but will require the government to take steps to ensure that the range of controls which are available operate or are extended so as to ensure that these standards are not breached. Wide powers are granted by Part IV of the Environment Act 1995 to designate air quality management areas where it is found that the standards are not being met and to impose controls to ensure that the quality of the air is improved. The biggest single problem in this area is that of pollution caused by traffic and if strict air quality standards are to be set and observed, further controls on traffic concentrations may well be likely.

The government is committed to reducing the overall emissions of various gases contributing to global climate change, *eg* carbon dioxide, methane, ozone depleting substances. For some, *eg* CFCs there are legal measures providing for the elimination of their use; for others it is hoped that the targets can be reached by a combination of existing measures, *eg* emission limits on vehicles and voluntary reduction schemes within industry (see *Climate Change: The UK Programme* (Cm.2427, Jan.1994)). If the targets accepted at the Rio conference and in other international and European agreements are to be met, significant measures will have to be introduced within the next few years.

A further possibility is the imposition of a 'carbon tax', a tax on fuels related to the amount of carbon dioxide (and other greenhouse gases) produced when they are consumed. The EC has been keen to introduce such a measure but the UK is insisting on waiting pending broader international agreement. If such a tax were introduced, energy efficiency and the choice of fuels would become very significant financial issues.

Water pollution

Any discharge into water must be authorised by a consent from SEPA (formerly the river purification authority) under s.31 of the Control of Pollution Act 1974 or by an authorisation under Integrated Pollution Control. Such consents will be subject to conditions and limits and it is a criminal offence to 'cause or knowingly permit' the unauthorised entry of polluting matters into 'controlled waters' (streams, rivers, lochs, ponds and underground water and coastal waters). One can be guilty of this offence despite the fact that all reasonable precautions have been taken to prevent a discharge. The legislation to protect fishing also creates a number of offences which could apply in the event of any pollution.

If any pollution is, or is likely to be, present in water, SEPA can take steps to remove or dispose of the polluting matter, prevent further pollution or restore the waters. The cost of such clean up work can be recovered from anyone responsible for causing or knowingly permitting the pollution to occur. The consequences of being responsible for an incident, even though not at fault in any way, can therefore be very serious, far beyond the fine imposed on a criminal conviction.

The sewerage authorities must provide sewerage arrangements for domestic effluent, but trade effluent will be accepted only on the basis of a specific consent which may well impose conditions, including treatment on site before the effluent enters the sewerage system. Any misuse of the sewerage system is an offence.

In order to prevent pollution incidents, there is a broad power for the Secretary of State to make regulations controlling the custody, storage and use of polluting matters (Control of Pollution Act 1974, s.31A). This power has so far been exercised only in relation to silage, slurry and agricultural fuel, but could be extended to control many other potentially polluting substances and require costly improvements to storage facilities. Likewise in areas where there is a risk of waters being affected by nitrate pollution, agreements can be made restricting the management of the land to minimise the entry of nitrates into waters.

Waste

The latest development in relation to waste is the proposed introduction of the landfill tax, whereby there will be a charge levied on every tonne of material which is sent to landfill sites. This is intended to provide a clear economic incentive to industry to reduce the quantity of waste being disposed of, and to encourage recovery, reuse and recycling.

This is just the latest in many changes in the law relating to waste, mostly as a result of the gradual implementation of Part II of the Environmental Protection Act 1990, with the new regime for waste management licences coming into force in 1995 (Waste Management Licensing Regulations 1994, SI 1994 No.1056). All producers and handlers of waste are affected by these new rules, and the stricter rules will inevitably lead to increased waste disposal costs, and financial waste if waste reduction opportunities are scorned.

An initial problem relates to the definition of 'waste', the statutory definition having been altered by the Environment Act 1995 to be in accordance with EC measures. There are various categories of waste, each defined for different purposes, and the definitions are often very complex. However, one important point is that anything which is being discarded is normally regarded as waste, even though to others it may still have some value. A business which uses as a raw material unwanted by-products from another process may therefore find itself being treated as being involved in waste treatment, and the sale of the by-product as a

transfer of waste, attracting the full regulatory controls on both parties. In practice major difficulties can usually be avoided, but the issue may well require some attention and difficult problems do arise.

The provision of most general application is that imposing a duty of care for waste (EPA 1990, s.34). Everyone involved in producing, handling and disposing of waste is placed under a duty to take reasonable care to ensure that no offences are committed in relation to the waste, to prevent its escape from the control of any person and to ensure that any time it is transferred it is transferred to fully authorised recipients and accompanied by clear description. Breach of this duty is a criminal offence, and has already led to several convictions. The effect of this is that everyone in the waste chain has to check up on everyone else: is the waste going to properly authorised persons? are they dealing with it in accordance with their licences *etc*? is it properly secured? does the waste fit the description given? This means that concern of business for their waste no longer stops 'at the factory gate', but must extend to monitoring the activities of those earlier and later in the waste chain.

In relation to waste disposal sites, the new regime for waste management licences requires that a licence be granted only to 'fit and proper persons', which requires the authority to be satisfied that the management of the activity will be in the hands of a technically competent person, that there is adequate financial provision to discharge the obligations under the licence (*eg* complying with conditions on aftercare), and generally that none of those involved (individuals or companies) have been convicted of offences relating to environmental matters (EPA 1990, s.74). These requirements are designed to ensure that waste is handled by responsible people who will, and will be in a position to, comply with all of the regulatory requirements, but who will obviously have higher costs as a result.

A further important provision relates to liability for sites. The holder of a waste management licence remains responsible for the site, whether it is in use or not, until the licence is surrendered to the relevant authority, but this will only occur if the authority is satisfied that the site is unlikely to cause pollution to the environment or harm to human health (EPA 1990, s.39). This means that it is no longer possible simply to 'walk away' from a site which is no longer being used, and authorities are likely to

accept the surrender of a licence only when the safety of the site is very clear. A site which is no longer in use may therefore continue to be a liability.

If any harm is caused by waste deposited unlawfully, the person who deposited it, or caused or knowingly permitted it to be deposited, is liable for the damage caused (EPA 1990, s.73). Therefore a company who knows that its waste is being unlawfully dumped, or is wilfully blind to this, may be liable for civil damages, as well as for any criminal penalties resulting from a breach of the duty of care.

Measures from the EC are also likely to be of direct significance. The Directive on packaging waste (94/62) is aimed at reducing the volume of such waste produced, with states being required to take measures to prevent the production of such waste and to encourage the reuse, recycling and recovery of any waste. Broad standards are laid down to ensure that packaging can be reused or recycled, and targets are set for each state, eg within five years 50-65% of packaging by weight should be recovered in some form. These requirements are likely to affect all packaging producers and users, as well as creating opportunities for recovery schemes. The Environment Act 1995 (ss.93-95) enables the government here to make detailed regulations to implement schemes to achieve these targets.

Two proposals also deserve consideration. One is for a Directive on landfill (OJ 93/C 212/33), which will impose specifications on sites and their operators, and may limit the combinations of materials which can be put into each site. Site operators will be liable for the site for 10 years after its official closure, which will only occur if the authority is satisfied with the monitoring and after-care arrangements. There will be arrangements for financial guarantees to cover the closure and after-care of sites. A more far reaching proposal is on civil liability for waste (OJ 91/C 192/6), imposing on the producer of waste strict liability for any harm caused, with a 30 year limitation period. Producers may be able to escape liability by transferring waste to fully authorised waste treatment and disposal facilities, but the owner of land may in some circumstances be held responsible.

Contaminated land and related issues

At present this is one of the most significant, but most uncertain, areas of the law. The specific provisions outlined above in relation to waste and the prevention of pollution of water provide a means by which the owner or occupier of land can be made responsible for the cleaning up of contaminated land, and the law of nuisance may require steps to be taken to prevent any contamination affecting the property of others. But the issues of identifying contaminated land, determining when and to what standards such land should be 'remediated', and, most importantly, who is to bear the cost have been the subject of much debate.

One set of provisions was included in the Environmental Protection Act 1990, in particular the plan for a register of potentially contaminated sites, but these have been repealed without ever being implemented, and it is not clear when the new provisions in the Environment Act 1995 will come into force. The impact of the new provisions will depend hugely on the content of official guidance from the Secretary of State on how they are to be implemented.

The 1995 Act imposes an obligation on local authorities to identify contaminated sites, and it is the local authority, or SEPA in the case of 'special sites' (still to be defined in detail), which is responsible for operating the statutory scheme. The person who caused the contamination, or the owner or occupier, can be served with a notice specifying what has to be done by way of remediation and the time within which these steps must be taken. The prime responsibility lies with the person who caused or knowingly permitted the polluting substance to be present in the land, but the exact distribution of liability, especially determining at what stage a current owner who has played no part in the contamination will become liable, will be a complex issue especially where several people have been involved over a long period or some of those initially responsible cannot be traced. Provisions exist for the authorities to take remedial action themselves and to recover the costs from those responsible. There is a detailed scheme of appeals, registers and qualifications where unreasonable costs would be involved.

Although this legislation is now in place, until the guidance has been seen in its final form and the operation of the measures tested in practice, it is impossible to say how significant these new provisions will be. The issue is, obviously, of crucial importance as it fundamentally affects the value of the land held by any company; land which is to be subject to a requirement for costly remediation may in fact be a liability, not an asset. The value of any land will also be important to banks and other lenders seeking security for loans.

More generally, the EC Commission's *Green Paper on Remedying Environmental Damage* (COM(93)47, May 1993) clearly supports the development at a community level of strict liability for environmental damage, but reflects the difficult issues of detail to be resolved. The Council of Europe has agreed a Convention on Civil Liability for Damage Resulting from Activities Dangerous to the Environment, imposing strict liability on the person supervising dangerous activities (those involving hazardous substances or genetically modified organisms, and waste sites) at the time the incident occurs or in relation to waste sites, at the time the damage becomes known. The liability is for the cost of preventing environmental damage or subsequent restoration, and may be invoked by environmental associations as well as by anyone suffering direct harm. However, although there is interest in developing a uniform approach throughout the EC based on strict liability, the Convention is not likely to be adopted as it stands.

Planning and conservation

Businesses are accustomed to the operation of the town and country planning system under which permission from the planning authority must be sought before many sorts of development can take place on any site. Planning requirements are likely to be particularly important in relation to the development of new sites, but will also affect extensions, alterations and changes of use at existing premises.

Stricter controls apply for listed buildings, in conservation areas and where sites designated for nature conservation purposes are likely to be affected. In particular, under the new Conservation (Natural Habitats Etc) Regulations 1994 (SI 1994 No.2716) a development which affects a 'European Site' designated for conservation purposes, including development outwith the boundaries of the site itself, must be refused permission, even if normally exempt from the requirement for express permission as permitted development, and any unimplemented permissions must be reviewed and if necessary modified or revoked in order to protect the site, similar rules affect other official consents affecting such sites.

A formal environmental assessment may be required in relation to applications for permission for certain forms of development, particularly in environmentally sensitive locations (Environmental Assessment (Scotland) Regulations 1988 (SI 1988 No.1221)), and the categories of development covered have recently been expanded (Environmental Assessment (Scotland) Amendment Regulations 1994 (SI 1994 No.2012)).

Miscellaneous

The preceding paragraphs have given an account of some of the most significant areas of environmental law. Many other areas could also be covered and the following areas in particular may have a considerable impact on particular businesses.

Noise

Noise is controlled in many ways. The general law of nuisance can be used to prevent disturbance, there are statutory controls on certain forms of noise (*eg* construction works), building standards require certain levels of noise insulation, and standards are applied to many products, *eg* motor vehicles, domestic appliances.

Radioactive substances

Under the Radioactive Substances Act 1993 any premises using radioactive substances must be registered and the accumulation or disposal of such material is prohibited unless specific authorisation has been obtained. Sites using significant quantities of radioactive materials must be licensed under the Nuclear Installations Act 1963 and there is a statutory right to compensation for any injury caused with an extended limitation period of 30 years.

Pesticides

The sale and use of pesticides is controlled under Part III of the Food and Environmental Protection Act 1985 and the Control of Pesticides Regulations 1986 (SI 1986 No.1510). All pesticides which are to be sold or used must be authorised by the Secretary of State and all reasonable precautions must be taken to protect the health of human beings, creatures and plants and to safeguard the environment. To ensure that pesticides do not have an adverse effect through the food chain, controls are also imposed through the Pesticides (Maximum Residue Levels in Food) Regulations 1988 (SI 1988 No.1378) and the Pesticides (Maximum Residue Levels in Crops, Foods and Feeding Stuff) Regulations 1994 (SI 1994 No.1985).

Genetically modified organisms

The use of genetically modified organisms is subject to control under Part VI of the Environmental Protection Act 1990 and regulations made thereunder (Genetically Modified Organisms (Contained Use) Regulations 1992 and 1993 (SIs 1992 No.3217, 1993 No.15)); Genetically Modified Organisms (Deliberate Release) Regulations 1992, 1993 and 1995 (SIs 1992 No.3280, 1993 No.152, 1995 No.304)). Features of the regulatory system include risk assessments, with a duty to ensure that any

new knowledge is taken into account, authorisations and a duty to employ the best available techniques not entailing excessive cost to prevent damage to the environment.

Health and safety at work

As with environmental provisions, the requirements of the body of law governing health and safety at work impose burdens on industry to ensure the safety of workers and of those at or near business premises. There may be an overlap between measures required for health and safety purposes and for environmental protection *eg* the prosecution leading to the £60,000 fine following a water pollution incident at Freuchie was actually based on health and safety legislation.

Hazardous substances

Many hazardous substances are subject to particular controls. Some of these fall more appropriately within the general heading of health and safety at work, *eg* the Control of Substances Hazardous to Health Regulations 1994 (SI No.3246) and the Control of Industrial Major Accident Hazards Regulations 1984 (SI 1984 No.1902), and the rules can apply to all aspects of the use, storage, labelling and transport of such materials. If large quantities of substances are to be kept on any site, specific hazardous substances consent must be sought from the planning authority, and may be granted only subject to conditions (Town and Country Planning (Scotland) Act 1972, ss.56A-56O).

Suggested reading in environmental law

All of the following books except for the first mentioned, are based on English Law and whilst the basic structure of the law is the same as in Scotland there are, often substantial, differences in detail, authorities and procedures. Furthermore, readers are reminded that law is constantly changing and that, consequently, law books rapidly become out of date.

Reid, C T (ed) (1992) *Green's Guide to Environmental Law in Scotland*, Edinburgh, W. Green & Son.

Ball, S & S Bell (1995) *Environmental Law* (third edition) Blackstone, London.

Burnett-Hall, R (1995) *Environmental Law* Sweet & Maxwell, London.

Garbutt, J (1995) *Environmental Law: A Practical Handbook* (second edition), Wiley Chancery, London.

Lister, C (1996) *European Union Environmental Law: A Guide for Industry*, Wiley, Chichester.

National Society for Clean Air and Environmental Protection (annual) *Pollution Handbook*.

Journals

ENDS Report (Environmental Data Services)

Scottish Planning and Environmental Law (The Planning Exchange)

Environmental Law and Management (Wiley)

Environmental Liability (Sweet and Maxwell)

Endnote:

¹ As at April 1996.

² The initiation and development of SEPA has been long and complex and this looks set to continue as SEPA gets into its stride. For a little more information about SEPA see, for example, *Scottish Planning and Environmental Law* 52 (pp102-103) or contact SEPA directly. For a somewhat more analytical discussion of SEPA's likely future see, for example, J. Rowan-Robinson *Scottish Law and Practice Quarterly* (1) 1995 (pp41-52).

APPENDIX 2

INTERVIEW TEMPLATE

What sorts of environmentally related expenditures or revenues do you encounter?

- Capital *versus* revenue:
- Normal business *versus* exceptional?

To what extent do these costs fall within existing:

- accounting or chart of accounts categories?
- revenue cycles?
- capital cycles?

What, if anything, determines whether an environmentally related expenditure:

- is material?
- falls outside normal accounting categories?
- falls outside normal accounting rules and procedures?

Are there instances of environmentally related benefits or revenues exceeding categories of related environmentally related costs?

What contact do you have with your environmental managers?

To what extent are the accounting implications, particularly financial statements, discussed with your environmental manager?

How are special provisions and/or contingent liabilities determined or rejected?

What is the role of the environmental manager in this process?

With respect to:

- plant and machinery;
- depreciation and remediation;
- stock;
- liabilities;
- provisions;
- capital commitments, particularly BATNEEC, BPEO and regulators;
- categories of normal expenditure, (especially energy, waste, packaging);
- exceptional and extraordinary items;
- associate companies and subsidiaries;
- other investments;
- other items;
 - (a) how are they affected by the environmental agenda?
 - (b) what accounting process do you adopt to handle them?
 - (c) what impact do they have on the financial statements?
 - (d) what additional accounting rules are needed?

How aware or concerned are you by current, immediate and future environmental law?

APPENDIX 3

FURTHER INFORMATION

For a general introduction to environment and management issues

There are several worthwhile texts on the subject. Perhaps the most useful single source in the UK is the Institute of Environmental Management closely associated with the Centre for Environment and Business in Scotland (CEBIS) who are based in Edinburgh and produce a most useful handbook and provide regular briefings on developments. There are many other useful sources including Business-in-the Environment and The Environment Council.

For a general introduction to accounting and environmental issues

Canadian Institute of Chartered Accountants (1993), *Environmental Stewardship: Management accountability and the role of Chartered Accountants* (CICA), Toronto.

Ditz D, J Ranganathan and R D Banks (1995), *Green Ledgers: Case studies in corporate environmental accounting*, WRI, Washington DC.

Gray R H (1990) *The Greening of Accountancy: The profession after Pearce*, ACCA: London

Gray R H, K J Bebbington and D Walters (1993), *Accounting for the Environment: The greening of accountancy Part II*, Paul Chapman: London.

Institute of Chartered Accountants in England and Wales (1992), *Business, Accountancy and the Environment: A policy and research agenda*, Macve R & A Carey (eds), ICAEW, London.

In addition, it is worthwhile following up references given in the bibliography of this monograph and watching for publications, particularly research monographs, from the professional bodies.

To maintain a watching brief on developments by the profession

The obvious point of contact is the professional bodies themselves, ICAS, ICAEW, ICAI, ACCA, CIMA and CIPFA, plus the work of the ASB and, in Europe, of FEE. The Canadian publications are especially useful from both The Canadian Institute of Chartered Accountants (CICA) and the Canadian Society of Management Accountants (CMA).

To keep abreast of developing issues

On accounting issues, *Environmental Accounting and Auditing Reporter* published by IBC in London is an extremely helpful newsletter published ten times a year. The standard general reference to keep abreast of all business, environmental and government developments is the *ENDS* monthly publication, published by Environmental Data Services in London. A number of the larger accountancy firms also publish useful material in the area.

To keep abreast of longer term and research developments

A well established international network for researchers in the field is based on the Centre for Social and Environmental Accounting Research (CSEAR) at the University of Dundee. The United Nations is also active in the field with UNEP concentrating upon environmental reporting and the ISAR group following environmental accounting, especially for sustainability.

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