

**An Investigation into a Conceptual Framework  
for Corporate Environmental Reporting**

**Aris Solomon**

**VOL I**

**PhD**  
**Sheffield University Management School**  
**Department of Accounting & Finance**  
**June 1997**  
**October 1998**

## Abstract

The objective of this thesis is to develop a way forward for voluntary corporate environmental reporting in Britain, given the absence of any new legislation requiring mandatory corporate environmental disclosure, with the principal aims of beginning the process of making the implicit reporting framework explicit, investigating user needs, and identifying the level of consensus between three groups. These are a normative, interested party and company group. The thesis develops a theoretical conceptual framework model, with a disclosure and reporting component, and investigates the model empirically in relation to the level of consensus between the normative, interested party, and company respondent groups, using a mail questionnaire. The approach adopted uses the financial reporting conceptual framework, which represents the *status quo*, as a basis for developing a conceptual framework for corporate environmental reporting. The empirical evidence suggests there is comparability between financial and environmental reporting, on a fundamental basis. Further, the findings reveal that there are disclosure, reporting and attitude gaps between the requirements of the normative and interested party groups, and the practices (and attitudes) of the company group, within the current voluntary corporate environmental reporting framework. Indeed, the normative and interested party groups appear to require more "ambitious" and "mature" corporate environmental disclosure, rather than the unambitious and perhaps "immature" information currently provided by companies. Two policy recommendations, aimed at reducing the gaps between what is required and what is produced, arise from the thesis. First, a dissemination with education strategy, and second, a regulation with education strategy. However, the empirical evidence suggests that the latter is the preferred and more appropriate route.

## Acknowledgements

Firstly, I would like to thank my family for all the support they have given me over the years, namely, my wife, Jill Frances Solomon, my mother, Gloria Papadopoulos, my sister and brother-in-law, Jocelyn and Stephano Esposito, and my mother and father-in-law, Brenda and Derek Thompson, for putting up with me, and helping me.

Special thanks to Linda Lewis, my supervisor, who has become a very good friend and who has helped advance the ideas behind the thesis, at all stages. Linda also provided a great deal of support for the funding of the PhD, from Manchester and Sheffield, and organised teaching which did not interfere unnecessarily with the research. I would also like to thank David Owen for his help and advice with the thesis, and for his kind support. I am also extremely grateful to my external examiner, Clare Roberts, for her clear guidance in preparing the thesis for resubmission.

From the University of Sheffield, I am extremely grateful to Wendy Rodgerson, Michelle Gleadall, Pauline Barringer and Elaine Callery, for the excellent secretarial support that they have given to me. Thanks also to Rebecca Boden for her comments at PhD Committee meetings, as well as for the financial support which she provided for the questionnaire survey.

From the University of Manchester, I am grateful to Stuart Turley for his helpful comments at PhD Committees, and particularly for his clarification of the importance of decision usefulness. I would also like to express my thanks to Nathan Joseph, for responding patiently to queries on nonparametric statistics. Thanks also to Martin Walker, for helping with the teaching assistantship at Manchester, as well as to Hilary Garraway, Catherine Dodd, April Pepper, Carol Lucas and Irene Kelly for their secretarial and administrative support.

I also wish to express my gratitude to the large number of respondents who made the questionnaire survey possible. Very special thanks to my wife, for typing and editing the thesis, and to my mother-in-law, for proof reading the thesis. Finally, I want to thank Gareth Wilson, my very long-time friend, Derek, my father-in-law, and my friends, Julie Froud and Karel Williams, for their support throughout the PhD.

Finally, I acknowledge gratefully the financial support from the University of Manchester and the University of Sheffield.

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## Chapter One

### Introduction

*"The days in the last century when a company's sole objective was generally accepted to be to maximise profits and when it was seen as only accountable to its shareholder are long gone".*

Macve and Carey (1992, page 13).

#### 1.1 Rationale and Objectives

Over recent years the natural environment has attracted increasing attention. The goal of economic growth has led to greater industrialisation of the planet. This has resulted in vast levels of pollution as well as immense depletion of the Earth's natural resources. The effects of these activities on the environment in which we live can be extensive and may result in ecological disaster, unless they are countered. As a result, there has been growing concern with environmental issues in all sectors of society including industry, government, business, and academia. In order to divert the current trend of environmental exploitation, it is essential that information concerning the effects of commerce on our environment is made readily and widely available. Greater information availability may lead to better decision making, which in turn could be translated into more effective action, eventually reducing the possibility of an ecological disaster. Consequently, in recent years, interested parties have demanded increasingly more corporate environmental disclosure. This expanding interest in environmental issues, has created an "environmental ethos"<sup>1</sup> which now characterises parts of society.

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<sup>1</sup> The "environmental ethos" is the term used throughout this thesis to describe the currently increasing awareness of environmental issues in society as a whole.

The objective of this thesis is to develop a way forward for voluntary corporate environmental reporting in Britain, given the absence of any new legislation requiring mandatory corporate environmental disclosure, with the principal aims of beginning the process of making the implicit reporting framework explicit, investigating user needs, and identifying the level of consensus between all relevant parties. The approach involves investigating any links between financial and environmental reporting, thereby working within the *status quo*. This thesis investigates empirically the potential connections between the conceptual framework for corporate financial reporting, and a conceptual framework (developed within the thesis) for corporate environmental reporting based on consensus between normative, interested party, and company sample groups.<sup>2</sup> The methodological approach employed in order to obtain a consensus from the three respondent groups is a mail questionnaire.

Corporate financial reporting is an established practice in Britain with institutions, professions, and a comprehensive legal infrastructure, all of which are there to inform the owners of the company's capital, as well as other stakeholders, about the financially-oriented activities of public limited companies. The current mandatory infrastructure requiring companies to report is already established. This legal relationship makes companies accountable to the owners of capital. Corporate financial reporting in its present form is an important part of the *status quo*. Therefore, if fundamental commonalities can be found between environmental and financial reporting, then a system of environmental reporting can evolve quickly within the *status quo*. This may provide a way in the future of increasing the quality and quantity of corporate

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<sup>2</sup> The exact definitions and sampling criteria for these three groups will be discussed later in the study.



environmental disclosure which is both cost effective, and capable of implementation with minimum disruption to the *status quo*. For example, it is possible that the marginal costs attached to developing a similar framework for environmental reporting to that of financial reporting could be less than those for developing an entirely independent and different framework. Further, a conceptual framework for corporate environmental reporting which compliments the current conceptual framework for financial reporting may be more understandable to users, due to its similar "language", than a framework developed using entirely different criteria. For example, users would have to acquire far less additional skills for reading and interpreting corporate environmental disclosure, if a similar framework were adopted. These are a number of pragmatic arguments for developing a conceptual framework for corporate environmental reporting which shares characteristics with that for financial reporting. They may not be theoretically the most appropriate reasons, however we live in a world of financial constraints and realities and it is unrealistic to expect the majority of companies to report environmentally if major paradigm shifts are expected.

So, how can comparability between financial and environmental reporting be gauged? Perhaps the conceptual framework is the most appropriate means of investigating similarities between these two types of reporting. The essence of financial reporting is its underlying conceptual framework which represents its foundations. Therefore, if common characteristics can be detected between financial and environmental reporting, and the main differences highlighted, it will then be possible for companies to report on environmental issues, explicitly using the financial reporting framework as a basis. One area of difference is that for environmental reporting, the interested parties may require information on a financial, quantitative, and/or qualitative basis. This reporting structure

may be interpreted as a tree with the basic components of, for example, the qualitative characteristics and decision usefulness representing the trunk, with branches extending to financial and environmental reporting. Some link between financial accountability and the environment has been suggested in the Corporate Report (ASSC, 1975, paragraph 6.45):

"It is tempting to propose that entities disclose information which will show their impact on, and their endeavours to protect society, its amenities and environment".

An area of intersection between environmental and financial reporting is presently the use of the published corporate annual report as a vehicle for disclosure. Many companies which report environmentally begin by disclosing information voluntarily in the corporate annual report. They may then produce an annual environmental report, which is possibly cross referenced between the two. The production of an annual environmental report has similarities to that of a corporate annual report: firstly, they share the same time span; secondly, disclosure may be verified; thirdly, it is historical in nature, and; fourthly, accountants are involved in the reporting of both financial and environmental disclosure. Also, both types of reporting are likely to be of interest to different user groups.

A major reason for developing a conceptual framework is that it allows implicit practices to be made explicit. A relatively small number of the largest British companies voluntarily disclose environmental information at present, which implies that an implicit reporting framework must exist. As Macve (1981, page 22) states:

"Anyone recommending a particular accounting practice must necessarily base his views on an implicit conceptual framework - and it is therefore important, if there is to be rational discussion and evaluation of the proposal, to try and make that framework explicit".

The current research provides one way of transforming the implicit framework in environmental reporting into an explicit framework.

The difference between this approach, and an accounting standard *per se*, is that, firstly, the disclosure required is unlikely to be limited to that which can be obtained on a financial basis, suggesting that the elements are likely to be different for environmental reporting. Disclosure on a financial basis is presently covered by the edicts of the Accounting Standards Board. Secondly, although the two types of reporting are likely to share the same user groups, the priority of the groups is unlikely to be the same.

In order to expose an explicit conceptual framework for corporate environmental reporting, which is not based entirely on normative judgements, the level of consensus between the parties involved needs to be investigated. This level of consensus between the parties will be derived empirically, thus allowing comparisons to be drawn between the financial reporting conceptual framework currently in place and an empirically exposed explicit conceptual framework for corporate environmental reporting investigated in the thesis. An approach to developing a conceptual framework based on achieving a level of consensus between relevant parties has been promoted in Ijiri (1983).

One important aspect of this thesis concerns the rationale underlying interested parties' demand for corporate environmental disclosure. The current research adopts the approach that environmental information is for decision making purposes. However, a theoretical distinction is drawn, for the purposes of this study, between economic decision

usefulness, as advocated in financial reporting, and "accountability decision usefulness"<sup>3</sup> *vis-a-vis* the interested parties. The current research considers that economic, and accountability decision usefulness are not mutually exclusive, and that in fact the combination of the two approaches would better serve the needs of interested parties.

If some commonality can be established between the conceptual framework for financial reporting, and a conceptual framework for environmental reporting, this in turn may lead to more comprehensive accountability to owners of capital and other stakeholders.

It is also important to consider tentatively some of the perceived problems with both the conceptual framework in financial reporting, and problems with corporate environmental reporting, and to evaluate how these problems might be resolved in the current research.

One perceived problem of the conceptual framework in financial reporting, *per se*, is that it is seen as inflexible. In other words, once established, probably by powerful interest groups such as company executives, it is likely to benefit companies rather than stakeholders. However, in relation to developing a conceptual framework for corporate environmental reporting, it is proposed that a consensus approach should contribute towards mitigating this problem. Secondly, there is no universal agreement that companies are accountable to society, and this constitutes a problem with corporate environmental reporting. However, Gray, Owen and Maunders (1987a, page *ix*) state that:

"Social reporting is the process of communicating the social and environmental effects of organizations' economic actions to particular interest groups within society and to society at large. As such it involves extending the accountability

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<sup>3</sup> "Accountability decision usefulness" is discussed in chapter two. It is a term representing, for the purposes of this thesis, disclosure which is not solely for the purposes of economic decision-making by the owners of capital, but is also for the purposes of accountability to a wider audience of interested parties.

of organizations (particularly companies), beyond the traditional role of providing a financial account to the owners of capital, in particular, shareholders. Such an extension is predicated upon an assumption that companies do have wider responsibilities than simply to make money for their shareholders".

Therefore, a major premise of the current research is that companies are accountable to society as a result of the all-encompassing "environmental ethos".

Gray, Bebbington and Walters (1993) use the present accounting system as a basis for disclosure of environmental information. They also suggest a more socially just system of disclosure. However, critical accountants have little time for environmental disclosure within the present accounting framework, as they in fact have no time for the present accounting framework *per se* (see Tinker, Lehman and Neimark, 1991).

A framework which works hand in hand with the present corporate reporting framework is not ideal, but it does provide a starting point from which disclosure can take place. The basic argument is that some disclosure is better than no disclosure. Consequently, an organised system of disclosure, complementary to the present corporate reporting framework, is more likely to provide short-term gains than the development of a totally new framework, based on the views of a select number of academics.

## **1.2 Thesis Layout**

The layout of the thesis is as follows. Chapter two constitutes a discussion of conceptual frameworks in various disciplines, including corporate financial reporting and corporate environmental reporting. Chapter three considers: reality, the current state of corporate environmental reporting, issues in corporate environmental reporting and, a rationale for

developing a conceptual framework in corporate environmental reporting. In chapter four, a model with a disclosure component and a reporting component, developed from relevant theory and literature, are introduced forming the basis for a conceptual framework for corporate environmental reporting. Chapter five introduces the research design and discusses methodological issues. The approach involves reporting and analysing the responses to a mail questionnaire (distributed to the three sample groups). In chapter six, there is a statistical analysis and interpretation of the questionnaire responses for the normative group. This involves descriptive and non-parametric statistical analyses, with the application of Wilcoxon and Kruskal-Wallis tests, as well as substantial use of factor analytical techniques. Chapters seven and eight repeat the methodology of chapter six for the interested party and company groups, respectively.

Chapter nine uses two and three sample Kruskal-Wallis tests, to make attitude comparisons between the three respondent groups. In chapter ten, the model (established in chapter four) is revisited, as is the rationale for developing a conceptual framework in corporate environmental reporting, and the thesis is concluded.

The following chapter introduces conceptual frameworks in a variety of disciplines and discusses the use of the conceptual framework methodology.

## Chapter Two

### Conceptual Frameworks

*"In any field of study or activity, including financial accounting, there are a number of reasons for developing a conceptual framework, which is a collection of broad rules, guidelines, accepted truths, and other basic ideas about the field".*

(Miller and Redding, 1986, page 98).

#### 2.1 Introduction

What is a conceptual framework? Although there are many different definitions of a conceptual framework, they generally imply that a conceptual framework is a methodology used to establish a body of knowledge in a discipline by taking stock of, and codifying, the literature, which is in turn used to develop a model of reality<sup>1</sup> in an area, and provide policy recommendations. This model of reality highlights any problem within the discipline that needs to be addressed by academics, practitioners and even government. This chapter considers conceptual frameworks in a range of disciplines, including corporate financial reporting and corporate environmental reporting. The following discussion of conceptual frameworks suggests that they share a number of commonalities, including: establishing a nomenclature for a discipline where none exists (or where a common terminology does exist but is used inconsistently); using relevant literature to develop a model; using diagrams and/or matrix tables to illustrate interrelationships, and; making the implicit explicit. There seems to be a continuum of conceptual frameworks, which begins with personal interpretations of a particular subject area, based on relevant literature. The continuum extends through several stages of development, where the most developed form is one which incorporates the findings of

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<sup>1</sup> The concept of "a reality" will be discussed in detail in chapter three.

empirical research, testing the models developed in previous stages. This chapter falls into the following sections: section 2.2 considers conceptual frameworks across disciplines; section 2.3 discusses conceptual frameworks in corporate financial reporting; section 2.4 deals with conceptual frameworks in environmental reporting, and; section 2.5 considers the present conceptual framework for corporate financial reporting in relation to environmental reporting.

## **2.2 The Application of the Conceptual Framework Methodology Across Disciplines**

This section reviews conceptual frameworks in a selection of disciplines and evaluates the use of the conceptual framework methodology. The specific disciplines were selected as each is characterised by a proliferation of conceptual frameworks, and each provides examples of frameworks at every stage in the development of the use of the conceptual framework methodology. This section is divided into three parts. The first considers examples of conceptual frameworks in various disciplines. The second evaluates the use of conceptual frameworks in these disciplines and the third briefly summarises the discussion.

### **2.2.1 Conceptual Frameworks Across Disciplines**

Following a literature search at the University library and on the Internet, a number of disciplines stand out in their frequent use of the conceptual framework methodology, including, for example, nursing, marketing and geography. Examples were chosen to represent a total of 14 disciplines, both where conceptual frameworks are commonly

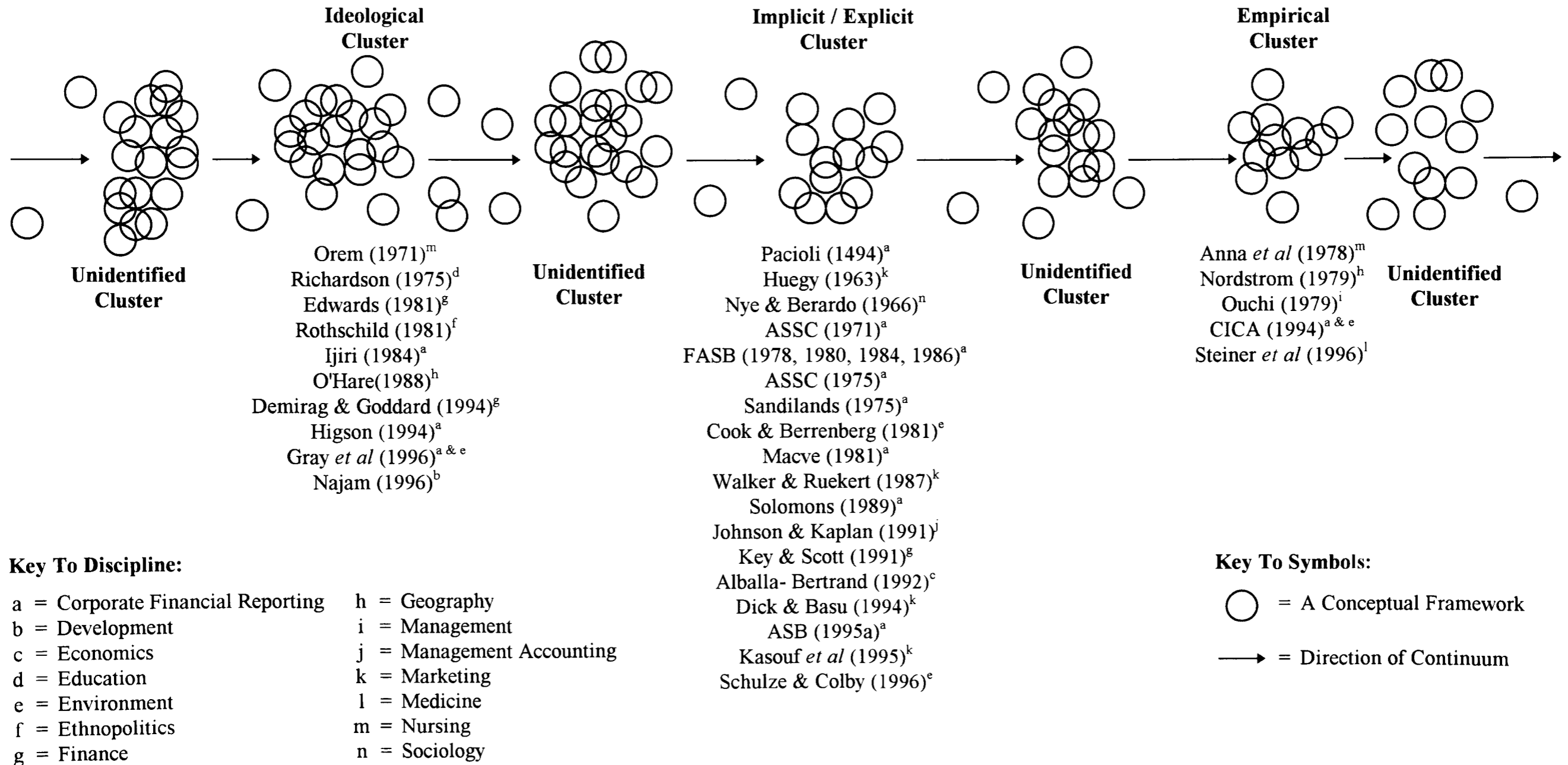


used, and where the methodology is implemented in a variety of ways. The application of the conceptual framework methodology within this variety of disciplines ranges from extremely simplistic to advanced, both at a theoretical and applied level. Every example used in this section portrays a slightly different use of the conceptual framework methodology, so that an image of this methodology can be represented. Despite the diversity of disciplines to which conceptual frameworks are applied, this discussion shows that there appears to be a common acceptance across disciplines as to what a conceptual framework is (a synthesis of literature, development of models applied to a theory or theories, with possible empirical testing), as well as the reasons for developing a conceptual framework (to further understanding in a discipline, to make the implicit explicit, and to clarify debate).<sup>2</sup> These common characteristics have been depicted in a diagrammatic form on a continuum, with clusters (see diagram 2.1). The continuum suggests that there are various levels of development in the use of conceptual frameworks. The clusters suggest that conceptual frameworks across disciplines share certain inherent characteristics. The following survey brings to life the series of clusters on this continuum. The position of a cluster on the continuum may, to some extent, represent the theoretical maturity of the discipline under discussion. The position of each conceptual framework within a cluster depends on the use of different aspects of the methodology, such as a literature review or empirical testing of the conceptual framework. The suggestion is that conceptual frameworks in a variety of disciplines do share a number of common characteristics and that it may be suggested tentatively that an implicit framework is in place - a "conceptual framework of conceptual frameworks". The format of this section, dealing with conceptual frameworks across disciplines,

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<sup>2</sup> In most cases, this common acceptance results in an assumption by the authors that it is implicitly understood by the reader what a conceptual framework is and is not explained in any detail. Further, a conceptual framework can be seen as an analytical methodology in its own right.

**Diagram 2.1 : A Mapping of the Conceptual Framework Continuum**



follows the continuum from the most basic form of conceptual framework to the most developed.

The "ideological cluster" (see diagram 2.1) of conceptual frameworks can be seen towards the beginning of the continuum. Conceptual frameworks in this cluster share a literature review, related to relevant theory, and in some cases, they lead to the development of a theory. A model is then developed, sometimes using a diagram and/or a matrix table to explain, or show, relationships between variables, often leading to a general classification. This forms the basis of the conceptual framework. These conceptual frameworks may then be operationalised using an appropriate scenario, and an analysis follows, often resulting in some policy recommendation. Conceptual frameworks in this cluster tend frequently to represent the personal views of the author(s), based on some prior subjective conviction, which is supported by relevant literature. In a way, the ideological cluster represents a vehicle for the author(s) to present a normative view of reality which may or may not, represent the *status quo*. There seem to be two variants, variant one representing a personal ideology, whereas variant two represents a broader consideration of the literature as a whole.

A conceptual framework, which may be placed in variant one of the ideological cluster, is Rothschild's (1981) analysis of ethnopolitics (see diagram 2.1). He begins by stating the boundaries of his conceptual framework (Rothschild, 1981, page 1) :

"... even in its limited political analysis, this book does not pretend to be definitive; rather, it is presented as a conceptual framework for further research and analysis. Like most such conceptual frameworks, it is rather heavily taxonomic and theoretical".<sup>3</sup>

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<sup>3</sup> Throughout, there is an implicit assumption that the reader is fully conversed with what a conceptual framework is.

Rothschild's conceptual framework reviews the causes, options, and consequences of bringing ethnicity into the political arena. He begins by considering why ethnopolitics should be analysed academically, then classifies terms, with the aim of developing a common terminology in the area. The history of ethnopolitics in contemporary society is considered, with a deliberately limited literature-type review, allowing the author's views on the subject to be expounded and developed into a theory. From this theory, Rothschild develops a simplistic model of how, when, and why, individuals use their ethnic background to facilitate advancement under political conditions. Then, a typology of ethnopolitical conflict is introduced, which is a study/classification of the types of ethnic background individuals have, relative to the circumstances in which they find themselves in society. This is Rothschild's conceptual framework. He operationalises it in a dynamic sense, by applying it to two hypothetical sets of circumstances, to examine ethnicity within the state, and ethnicity and the state. The main implication resulting from his framework is that, under a given set of circumstances, people may use their ethnic background for advancement, and that this should be taken into account in formulating policy. This is a personal conceptual framework, based on the author's ideology on the subject, depicting his own reality. In this conceptual framework, a common language, a system of classification, and the fundamental beginnings of a theory are developed.

A slightly different illustration of the conceptual framework methodology which falls into variant one of the ideological cluster is Richardson (1975) in the area of staff development in further education. This application of the methodology differs in that a diagram is used to show inter-relationships between variables in the theoretical model. Also, the model is formally developed. Richardson describes a reality based on the

initial observation that there is a constant need for institutional change, and that in order to facilitate this, institutions should not hire and dismiss staff as circumstances change. Richardson develops his conceptual framework by the use of a short literature review, suggesting that the "cycle of organisational development" should form the theoretical basis for his model. A diagram is used to illustrate the cycle of organisational development in which inter-relationships of the stages of organisational development are explicitly stated and form the essence of his conceptual framework. His policy recommendations are that staff development needs to take place, and be made explicit, in order for organisations to adapt to changing circumstances. Staff should be retrained rather than made redundant, and people with newly required skills should be hired.

A final conceptual framework illustrating variant one in this cluster is presented by Demirag and Goddard (1994) who develop a conceptual framework for the causes of short-term profit pressures on multinational corporations. The differentiating aspects of this application of the conceptual framework methodology are that firstly, this is a short and concise application of the methodology, indicating that a conceptual framework does not have to be detailed, or of great length. Second, Demirag and Goddard use limited empirical evidence to support their theoretical framework. They develop a reality based on a brief discussion of the literature and statistics. Their reality assumes that in the 1950s and 1960s Britain had relatively high spending on corporate research and development. Since then, Britain's research and development spending has declined in proportion to that of Germany and Japan. They consider that short-term pressure on companies to increase their profits has resulted in lower research and development expenditure by UK-based multinational corporations. Five *a priori* expectations are presented, forming the basis of their conceptual framework of external short-term

pressures,<sup>4</sup> substantiated with reference to the literature. The purpose of the conceptual framework can be seen in the following statement (Demirag and Goddard, 1994, page 360) :

"We have examined all these claims and counter claims in the hope of clearing some of the fog around the short-termism debate".

The conceptual framework methodology is being used to clarify debate in the area.

Moving to the second variant of the ideological cluster, where there is a broader consideration of the relevant literature in developing the theoretical model, Edwards (1981) investigates the theoretical structures which sustain government regulation of futures markets in the United States.<sup>5</sup> He suggests that the development of a conceptual framework for the regulation of futures markets should serve as a compass, guiding regulation along its intended course, whatever that may be.<sup>6</sup> This conceptual framework lays out the theory for regulation and, applies this theory to futures markets. Relevant literature is used to consider the history of futures markets regulation. The approach taken by the regulators since their first intervention in the 1922 Grain Futures Act seems similar to the Accounting Standards Committee's "Fire Fighting Approach", where a perceived need, or crisis, preceded regulation. However, Edwards (1981, page 419) is of the view that :

"...today's regulatory edifice must surely rely on a more extensive and complex conceptual foundation".

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<sup>4</sup> These are: economic factors; usefulness of published financial information to shareholders; investment objectives of fund managers; importance of the market value of shares to the company, and; accounting regulations of research and development.

<sup>5</sup> Edward's approach mirrors that taken in chapter three of the thesis, where the arguments for and against government and self-regulation of corporate environmental reporting are considered in terms of market failures.

<sup>6</sup> The suggestion is that without a compass to guide them, the regulators may lose their way.

He uses the legal framework as his taxonomy for the conceptual framework. Then government regulation and self-regulation are compared and contrasted in relation to the workings of the futures markets. Edwards (1981, page 419) states :

"In other words, are privately organised futures markets likely to fail in some predictable way that might be remedied by government regulation?"

This is the essence of the government *versus* self-regulation debate. He argues that there is clearly no single conceptual framework which can encompass all views and continues with a classic discussion of market failure.<sup>7</sup> The model reflects his reality which is set in terms of possible market failures. He considers whether or not market failures exist in futures markets by examining the relevant literature for empirical evidence.

Summarising his arguments on market failures, Edwards (1981, page 435) states:

"It may be that self-regulation works better in some instances than in others".

He concludes his paper by stating (1981, page 439) :

"In short, a conceptual framework should be viewed as a kind of gyrocompass to help us in navigating our way through the self-interest and contending ideologies that always surrounded debate about regulation".

Edwards stops short of making any policy recommendation, leading to the possible development of foundations for coherent legislation in the area.

A further illustration of a conceptual framework representing the second variant of this cluster differs from the previous example in its precise specification of the theoretical model, which makes the conceptual framework clear, concise and readily understandable. Also, the use of a matrix table to clarify the theoretical findings adds to the overall clarity of expression within this application. Najam (1996) develops a conceptual

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<sup>7</sup> This includes monopoly, public good, externalities and information asymmetry.

framework which examines the multiple accountability of non-government organisations, suggesting that such a conceptual framework will allow clarification concerning to whom, and for what, these non-government organisations are accountable. He proposes a simple accountability model, which suggests three distinct categories of accountability. At the most basic level, non-government organisations are accountable to their patrons. Second, they are accountable to their clients. Third, they are accountable to themselves. Najam uses relevant literature to develop a model which distinguishes between functional accountability<sup>8</sup> and strategic accountability.<sup>9</sup> The relationship between the variables is then depicted using a matrix format. The principal conclusion drawn from the analysis using the conceptual framework is that non-government organisations focus primarily on their responsibility to their patrons to the detriment of their responsibility to clients, and even to that of their own goals and visions. This conceptual framework falls into variant two of the ideological cluster.

The final example of variant two in the ideological cluster is the use of a conceptual framework methodology in Geography, where it has been applied to a series of text books (O'Hare, 1988). In this case, the conceptual framework methodology has been formalised and made systematic in a simplistic way so that students are introduced to the subject area. The emphasis in this application of the methodology is on its pedagogic usefulness and this manifests itself in the repeatability of the conceptual framework model being applied to a variety of topics within the discipline. In each case the chapters follow a set format, establishing the conceptual framework in each area. The approach considers that each topic area within "Geography" can be seen in terms of a common

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<sup>8</sup> i.e. accounting for resources, resource use, and immediate impact.

<sup>9</sup> i.e. accounting for the impact that a non-government organisation's actions have on other organisations.



set of propositions, components, concepts, and inter-relationships, which form a conceptual framework. Typically, there is a short synthesis of the relevant literature, the introduction of terminology and some model development. Each book in the series<sup>10</sup> represents a sub-conceptual framework in the discipline, with some overlap between them. Therefore, the use of conceptual frameworks in this way could play an important role in education in areas other than Geography, as a methodological base for teaching and examination.

The next cluster along the continuum (see diagram 2.1) represents a more advanced use of the conceptual framework methodology, and is termed the "implicit/explicit cluster". This cluster is characterised by: an extensive literature review, which is in turn related to an established theory, or theories. Interestingly, conceptual frameworks in this cluster occasionally substitute the review of relevant literature with a review of practice, as in financial reporting conceptual frameworks. This then leads to the development of a model, which can be positive or normative in nature. A taxonomy is frequently developed. The more mature a discipline within this cluster, the more frequently is there confusion over terminology, and therefore the conceptual framework often begins with the development of a common terminology, often as a nomenclature. A model is then developed which may be composite in nature, where there is evidence of several competing theories. Existing, and perhaps competing, theories are often depicted diagrammatically. Then, an interpretation of the composite model is usually presented in a tabular matrix form, highlighting problem areas. From this, policy recommendations can be made as to, for example, future practice. Main features of this cluster include:

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<sup>10</sup> For example, there are eight conceptual framework books in the series, including the Human Impact on the Ecosystem (Tivy and O'Hare, 1981), The Geography of Settlement (Daniel and Hopkinson, 1989), Process and Land Formation (Clowes and Comfort, 1987), and Soils, Vegetation, Ecosystems (O'Hare, 1988).

making an implicit reality explicit; recommending policy, and; developing a common terminology.

An example of a conceptual framework in the implicit/explicit cluster is that of Key and Scott (1991), which looks at international trade in banking services. This conceptual framework models the international regulatory framework in banking services within the *status quo*. They consider the possibility of developing a consistent way forward for the regulation of banks on a global basis, beginning with regulation across borders. The conceptual framework is based on "The Banking Matrix", which cross-references policy goals with the method of providing banking services by a particular nation state<sup>11</sup>. They discuss the complementary and conflicting policy goals that nation states have with respect to banking services and how they complement, or conflict, with each other. The methods of providing banking services are divided into branches (cross-border, entry, operation) and subsidiaries (entry, operation). The matrix structure allows an interpretation of public policy goals in terms of the underlying banking regulations in a nation state. Instead of using a literature survey as the foundation for their model, existing national state practices are used, thereby making the implicit explicit. The authors are using the judicial system from different nations and incorporating them into their banking matrix model. In this sense, a judicial system can constitute a conceptual framework. The banking matrix displays the methods of providing banking services against policy goals. Where they meet, on the matrix, an appropriate rule for banking regulation is provided. Key and Scott (1991, page 6) state that their matrix is normative in nature, and that :

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<sup>11</sup> The policy goals are competitive markets, safety and soundness, avoidance of systematic risk, consumer protection: deposit insurance, and consumer protection: disclosure.

"Although reasonable people may differ over the particular principles we propose for each cell of the matrix, it is still valuable in relating policy goals to methods of providing services".

The most novel part of Key and Scott's approach is their introduction of the "appropriate forum" that needs to be created in order to develop a conceptual framework which represents the needs of users. The purpose of this forum is to allow the development of the harmonisation of banking legislation, which in turn could lead to a consensus in the area. They consider the possible characteristics that such a forum could have as well as existing organisations which might be able to play host to the nation states in developing a consensus, including General Agreement on Trade and Tariffs (GATT), the Organisation of Economic Co-operation and Development (OECD), and the Bank of International Settlements (BIS). Also of great importance in operationalising their conceptual framework is the development of a common terminology in the area.

A slightly different application of the conceptual framework methodology which still appears well-suited to the implicit/explicit cluster, is Alballa-Bertrand (1992), which deals with disasters in economy and society. The differentiating characteristic of this application is the complexity of the theoretical model development, which illustrates the potential for the conceptual framework methodology to provide a vehicle for in-depth theoretical development, within a clear and understandable exposition. With reference to existing literature, Alballa-Bertrand (1992, page 3) states :

"The main purpose of articulating an explicit conceptual framework is to provide this subject with a badly-needed analytical structure so as to reduce the loose and often misleading jargon and assertions which permeate the field".

The author begins by distinguishing between natural disasters, such as earthquakes, floods and volcanic eruptions, and man-made disasters, such as wars, recessions, riots, and technical failures. He also classifies natural disasters into sudden disasters

(earthquakes, hurricanes, etc.) and slowly developing disasters (droughts and epidemics). Furthermore, Alballa-Bertrand searches the literature but is unable to find a suitable definition for a disaster situation which reflects his reality. He considers that a definition of a disaster situation should include three elements: disaster impacts; disaster responses (and their effectiveness), and; interference.<sup>12</sup> This is the basis of his model. He develops each one of these three elements and the interactions between them, using a diagram to clarify the discussion. This illustrates the usefulness of the conceptual framework approach in establishing clear definitions and a common terminology, usually in an area where such definition is badly needed. He uses a matrix table to summarise the conceptual framework.

A third illustration of an implicit/explicit conceptual framework is in Management Accounting, where Johnson and Kaplan (1991, preface, page xxi) state :

"... these chapters provide a conceptual framework for the development of managerially relevant procedures to enhance process control, compute product costs, and evaluate periodic performance. We believe these chapters will help guide the efforts of practitioners, researchers and teachers to improve management accounting practice and theory".

A different and interesting aspect of this specific application of the methodology is that the authors themselves did not realise they had developed a conceptual framework until the second edition of their book. This shows that a conceptual framework which makes the implicit explicit can be created unintentionally, and that the methodology is sometimes used unknowingly. This piece of work has had substantial influence on management accounting since the late 1980s, illustrating the usefulness of this methodology in both developing theory and causing practice to evolve. Within the

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<sup>12</sup> This model is analogous to an economic model on the following specification: disaster situation = disaster impact + disaster response + interference (with the interference representing some type of noise, or error term).

research, Johnson and Kaplan develop several case studies using relevant literature, and trace a history of management accounting from the 19th century to the present day (see Loft, 1995, for an alternative history), the main conclusion being that in today's competitive environment, management accounting does not provide relevant information for decision making and control as it did in the past. They assert that management accounting in its present form is obsolete (this view is not held universally, see for example, Drury, 1996, and; Arnold and Turley, 1996). The conceptual framework considers that an adequate cost system comprises four different functions: firstly, the allocation of costs for periodic financial statements; secondly, the facilitation of process control; thirdly, the computation of product costs, and; finally, the support of special studies. The first function forms an essential part of their thesis that management accounting has been usurped by financial reporting. The fourth function, although important, is not regarded as essential. They therefore concentrate their discussion on process control and product costs. This forms the basis of their model. The conceptual framework presents, for the authors, an alternative to the traditional methods used by management accountants for the allocation of overheads, thereby creating a different reality. They review the literature and informally develop a model, with policy implications, which leads to the development of Activity Based Costing (ABC). Although Johnson and Kaplan do not mention the term conceptual framework after the preface, there is no doubt that they are presenting one. For example, Innes and Mitchell (1995, page 115) state :

"Thus ABC owes its current status both to the practitioners who first designed and effected its practical implementation and then to the academics who translated this work into a more general framework and who contributed to its popularity and dissemination through their publications".

Several conceptual frameworks in marketing also fit neatly into the implicit/explicit

cluster. Huegy's (1963) application of the conceptual framework methodology is novel in that it compares and contrasts three opposing views of what "the" conceptual framework in marketing should be, illustrating the usefulness of this methodology in clarifying debate in a discipline. The study is divided into three parts: the requirements in building the conceptual framework; the operational relevance of the basic structure, and; the research needed to develop a science of marketing. Each of the three competing frameworks expressed follows the now-established pattern of a literature review (establishing an image of reality), and the development of a taxonomy. This conceptual framework application also differs from those discussed previously in its emphasis on the operational relevance of the basic structure. Each of the opposing conceptual frameworks was compared with marketing in reality, this, perhaps being the most important aspect, as they were trying to see how well the models fared in the real world. The final part, research needed in developing the science of marketing, considers the needs of government, the academic community, and marketing practitioners. The policy recommendation was that the development of a conceptual framework in marketing needs to incorporate a consensus between these three groups.

Another marketing application of the conceptual framework methodology, by Walker and Ruekert (1987), differs in the way in which two existing theories (Porter, 1980, and; Miles and Snow, 1978) of business strategy are intertwined into a hybrid model. They begin with a literature review and develop a typology of business level strategy, concluding that there are three business level strategies. The specification of a common terminology in the area is central to the model development. They relate the three types of strategy, developed in their hybrid typology, to three organisational variables. Then, they develop a series of propositions using relevant literature as a basis for their

hypotheses, which form their conceptual framework. Lastly, their views are synthesised in a matrix table of strategies and organisational variables, with appropriate strategies where the two meet.

A further application of the methodology in marketing is that of Kasouf, Celuch, and Strieter (1995) who investigate consumer complaints as market intelligence for companies. This application stands apart from those discussed above in two ways. First, there is a discussion of the cost/benefit of providing complaint information, with the suggestion that the benefit of providing the information should be greater than the cost.<sup>13</sup> Second, they suggest that empirical research could be performed to test their conceptual framework and accompanying propositions. If this suggestion were taken up, then the conceptual framework could be reclassified into the next cluster in diagram 2.1 (the "empirical cluster"). Dick and Basu (1994) also apply the conceptual framework methodology in marketing in a similar way to Kasouf *et al.* (1995), in relation to customer loyalty.

Another example of an implicit/explicit conceptual framework, this time in the area of the environment and conservation, is Cook and Berrenberg (1981) which focuses on encouraging conservation behaviour within the energy sector. A major difference between the application of the conceptual framework methodology in this case, and those discussed above, is the combining of a large amount of literature and empirical studies to form a consensus model. Their conceptual framework takes the form of an "intellectual factor analysis" which develops eleven concepts divided into further sub-

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<sup>13</sup> There is a very interesting similarity between the underlying criteria for this conceptual framework and that for financial reporting, that is the benefit of obtaining the information should be greater than the cost.

categories. This conceptual framework draws together various theories and associated empirical work in a given area, and the authors develop concepts which characterise successful approaches to encouraging conservation behaviour, concluding that (1981, page 103) :

"... the tentative and preliminary nature of the proposed conceptual framework should be emphasised ... The most that can be hoped for is that such concepts can facilitate a comparison of research results from different studies and that this, in turn, will promote the theoretical integration of evidence regarding the determinants of conservation behaviour".

An extremely comprehensive application of the conceptual framework methodology, fitting into the implicit/explicit cluster, is Nye and Berardo (1966). Their approach is to combine a number of the conceptual framework approaches discussed above to create an original and comprehensive application of the methodology. First, they present a large number of implicit/explicit conceptual frameworks by different authors for the analysis of the family, including anthropology, the structure-functional approach, economics, law, and religion<sup>14</sup>. Second, each perspective follows a semi-structured format for the presentation of the conceptual frameworks, including amongst others, historical development, foci of study, concepts, basic assumptions, theory, practice, research, critique and discussion, and references. Critical to this is making the implicit explicit. Third, this series of conceptual frameworks provides a clear example of the use of a conceptual framework methodology as a tool in its own right for analytical purposes. Fourth, each of the frameworks is written by an expert in the field and follows a common outline, which includes: a literature review; foci of study; concepts; basic assumptions; product, or impact on family study; value orientation of scholars; a

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<sup>14</sup> This is one of the only pieces of literature which does not assume an implicit understanding of the conceptual framework methodology, but dedicates the introductory chapter to this methodology, at the same time examining the rationale for adopting this approach.



restatement of the framework; an evaluation of its contributions, contradictions and inadequacies, and; a bibliography. Overall, the major difference between this conceptual framework approach and those discussed earlier is the comprehensive way in which it incorporates many interpretations of the relevant subject and combines a large number of aspects of the methodology.

The third, and last specified cluster along the continuum (see diagram 2.1) is the "empirical cluster" which represents the empirical testing of conceptual frameworks. Conceptual frameworks in this cluster incorporate many of the characteristics discussed previously. The differentiating characteristic in this cluster is that the conceptual frameworks are either being tested empirically, or a conceptual framework methodology is being used as an empirical tool.

A conceptual framework which develops a two-part theoretical model and promotes empirical testing of the model, but does not actually perform the empirical testing is provided by Steiner, Dominik, Trussell and Hertz-Picciotto (1996) who consider the methodology used to measure contraceptive effectiveness, as most potential users require information on how well contraceptive methods work in relation to each other, to help their selection decision. They assert that presently it is difficult to compare the pregnancy rates of the different methods due to inherent weaknesses in the design, implementation, and analysis of past studies. Therefore, it is difficult to compare the effectiveness of each method such that accurate and reliable information is available to users. Essentially, present clinical trials of contraceptive effectiveness are not comparable. The authors suggest four variables (indices) which should be considered when designing and analysing clinical trials in the area, so that results can be readily

compared. They are: capacity to conceive; frequency and timing of intercourse; degree of compliance, and; inherent protection of the method. A further aim of their conceptual framework is to standardise the terminology used in the analysis of contraceptive clinical trials. They provide an overview of methodologies and terminology used in the literature for contraceptive clinical trials, suggesting their preferred methodology and terminology. The authors then develop two conceptual models. Their conceptual model of contraceptive efficacy (perfect use) and their conceptual model of contraceptive effectiveness (typical use) with indices 1, 2 and 4 common to both models and 3, degree of compliance, unique in the effectiveness conceptual model. The use of two models is regarded as essential, as in order to provide reliable information to answer the question "how effective is a particular method of contraception?", it is necessary to be able to estimate accurately the expected pregnancy rate. These models assess the proportionate reduction in the risk of pregnancy caused by, firstly the "perfect use" of a contraceptive method - efficacy, and, secondly the "typical use" of a contraceptive method - effectiveness.

A further, and slightly different, illustration of a conceptual framework which promotes, but does not use, an empirical methodology is Nordstrom's (1979) conceptual framework in geography. In this case, the conceptual framework methodology which has been developed for field work courses is to provide the theoretical basis for practical work. Nordstrom suggests a compact or core conceptual framework incorporating summary aspects of the others discussed earlier in this section. He discusses how a core conceptual framework methodology can be applied in fieldwork to a range of geographic topics. The importance of this is that firstly, he advocates a methodology which in its elements, can be applied across many disciplines and secondly, he provides a framework

which field researchers can apply in an organised and consistent manner, resulting in a research design that incorporates "best practice".

In the "empirical cluster" in diagram 2.1 are a series of conceptual frameworks which test theoretical models empirically, for example Anna, Christensen, Hohan, Ord, and Wells (1978) in the discipline of nursing. Fawcett (1997) and, Polit and Hungler (1997) provide details of further conceptual frameworks in nursing. One of the most referenced conceptual frameworks in the area of nursing is Orem's (1971) model of self-care. This conceptual framework is controversial, as maximising "self-care by patients" is central to its philosophy. Using the literature, Orem develops a model involving the patient, physician and nurse, and a diagram is used to show inter-relationships. His model falls into the ideological cluster but is tested empirically in Anna *et al.* (1978), who undertook a field study in a nursing home. This involved nine patients (with similar conditions) who were cared for by masters degree students, each undertaking eight hours of direct care over five consecutive weeks. In relation to commonalities between conceptual frameworks, probably the most important clinical finding was the need for the development/understanding of a common terminology, as those terms used in Orem (1971), and in the field study, led to confusion. Therefore, as with the Steiner *et al.*'s (1996) conceptual framework on contraception, and others discussed, clarification of terminology seems an essential element in the development of a conceptual framework.

In support of this view, Anna *et al.* (1978, page 10) state:

"It has become evident that a thorough working knowledge of the language of a concept is critical if the concept is to be successfully implemented and evaluated in practice".

Ouchi (1979) also uses an advanced form of the conceptual framework methodology to develop a model for organisations, aimed at achieving co-operation by the individuals

within the organisation, who have diverging objectives. The differentiating characteristic of this conceptual framework is that a case study approach is used to provide empirical evidence to support Ouchi's own theoretical model. He begins by using the literature to describe three fundamentally different mechanisms through which organisational corporate management copes with the problem of evaluation and control of the workforce. According to Ouchi (1979, page 833) :

"...markets deal with the control problem through their ability to precisely measure and reward individual contributions; bureaucracies rely instead upon a mixture of close evaluation with a socialized acceptance of common objectives; and clans rely upon a relatively complete socialization process which effectively eliminates goal incongruence between individuals".

He then explains how each of the mechanisms operates in the parts distribution division of a major company. He describes the two extremes of efficient workplace control. Firstly, organisations can go to the expense of searching for, and recruiting, people who fit its needs exactly. Alternatively, organisations can take on people who do not fill this optimum and therefore the company would need to go to the expense of introducing a managerial system to monitor, evaluate and correct their behaviour. Organisational recruitment practices are then linked to the three control mechanisms, suggesting that there is a direct relationship between forms of commitment and types of control. He concludes that different organisations have a mixture of control mechanisms and that in the future, greater clan control will be the norm. This conceptual framework later developed into "Theory Z" (Ouchi, 1981).

Having illustrated the diverse application of conceptual frameworks across disciplines in diagrammatic terms using clusters on a continuum, the following section evaluates their use.

### 2.2.2 An Evaluation of the Use of Conceptual Frameworks Across Disciplines

As disciplines mature, there is a need for clarification of the underlying nature of the discipline. One way of providing this is by using a conceptual framework methodology. Four benefits deriving from the use of a conceptual framework methodology arise from the discussion in section 2.2.1. Firstly, a conceptual framework can be used for pedagogic purposes as an introduction to a discipline, or subjects within a discipline. The bibliography which flows from the literature review often provides an invaluable source for further investigation. A common terminology adds to the understanding of the subject by clarifying terms. The model development allows the reader to grasp a reality. A second benefit of a conceptual framework is that it is based on a model which depicts the *status quo*. The model often attempts to make the implicit explicit, thus reflecting an existing reality - the *status quo*. This in turn sheds light on the *status quo* and allows suggestions to be made as to how it may be reformed, hopefully for the better and in the public interest. A third benefit of implementing a conceptual framework is that it leads to the identification of inadequacies within the *status quo*. The use of a conceptual framework methodology allows foresight to be applied to inadequacies. This suggests that a conceptual framework methodology can be used as a tool in order to discover, and even allow for problems to be solved, within a framework.<sup>15</sup> A fourth benefit is that the use of a conceptual framework allows sensible debate to take place. The model development leads to academic debate, in terms of the taxonomy, relationship between variables, propositions, and model. A conceptual framework allows clarity to be brought to the debate, with problems addressed in a concise manner. Policy recommendations

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<sup>15</sup> However, the tool can threaten the *status quo*, in that it makes the implicit explicit, and therefore reveals inadequacies within the existing system. These inadequacies may require reform and such reforms may represent dangers to those in power, and they may reject, or water down, any reforms. This suggests that there is a political aspect to any conceptual framework in any discipline.

which may flow from the conceptual framework can therefore also be fully debated in a coherent way.

Fawcett (1997) suggests that conceptual frameworks can be used for four purposes. Firstly, conceptual frameworks can be used to guide practice. Secondly, they can be used as a basis for research projects. Thirdly they can be used for pedagogic purposes, and fourthly they can be used in administrative situations. All these uses are illustrated by the frameworks discussed in the previous section. Nye and Berardo (1966) discuss the importance of conceptual frameworks, citing the following advantages. The first is that the development of a conceptual framework should provide adequate definitions of concepts, and thereby provide adequate measurement. A second advantage is that conceptual frameworks facilitate the researcher by providing an array of ideas. Thirdly, it is important that not only are the substantive results of research understood, but also that the essential concepts used are understood by those who are using the results (note that this was the primary objective of the conceptual framework in contraception). A fourth advantage is that the development of a conceptual framework allows effective communication between academics, who often speak different languages and make implicit assumptions and concepts unconsciously without consideration of other readers. Lastly, conceptual frameworks allow the clarification of assumptions, frames of reference, and implied variables and factors which are often made.

As with any methodology, there are limitations. Apart from inadequate development of the conceptual framework *per se*, the main problem is emphasising that it is "a" conceptual framework not "the" conceptual framework. Further, conceptual frameworks should not be static, but dynamic, in nature. Lastly, unless a conceptual framework is

tested empirically, it may be inadequate for application in practice, representing a limited, subjective perspective. In the current thesis, the empirical testing of the theoretical model is essential as it allows the model to be reassessed with the findings, so that perhaps the conceptual framework developed could be applied in practice.

In summary, a conceptual framework allows sensible and clear discussion in a particular discipline. The conceptual framework methodology also allows the development of taxonomies, allowing clarification of issues. The development of a nomenclature, or common terminology, is important. More advanced conceptual frameworks could generate empirically testable theories which may yield evidence to support or reject the underlying model. Overall, a conceptual framework should make a contribution to the body of knowledge in the discipline.

### **2.3 The Application of the Conceptual Framework Methodology in Corporate Financial Reporting**

This section considers conceptual frameworks in corporate financial reporting, but before discussing specific frameworks it is useful to discuss reasons which have been proposed for applying the conceptual framework methodology in this area. Miller and Redding (1986) have written at length about the Financial Accounting Standards Board's conceptual framework project, and have considered the reasons for establishing a conceptual framework in financial reporting. They cite three reasons for creating a conceptual framework, namely: description of existing practice; prescription of future practice, and; definition of commonly-used terms. They consider that there are two ways in which a conceptual framework based on the description of existing practice can be

helpful. Firstly, the development of a conceptual framework makes it easier to educate those unfamiliar with the field. Secondly, the description of existing practice would allow the formal statement of general rules, which are to be followed in similar situations. This will, in turn, allow the development of new, consistent rules for new situations which may arise. The investigation into developing a descriptive conceptual framework would begin by examining current practice, and then consider a higher level of abstraction. Therefore, a conceptual framework devised with the aim of describing existing practice can be described as bottom-up, or inductive in nature (see Miller and Reading, 1986, and; Elliott and Elliott, 1997). This is in line with making an implicit conceptual framework explicit. The main advantage of a descriptive approach is that it takes into consideration the real problems that have led to existing practices. This therefore maintains the *status quo* which could also pose a major problem if the *status quo* does not represent everyday reality, or is inappropriate. The major disadvantage of a descriptive approach is that it depends on observations of what is actually happening, that is, a description of everyday reality must be developed. Two problems arise. Firstly, a decision must be made as to whether or not what is being observed is also being practised, in the best way possible. Secondly, consensus needs to be achieved on what is actually happening, and why it is happening.

The second reason proposed for creating a conceptual framework, to provide prescriptions of future practice, involves providing agreement on how to resolve unsettled questions, both old and new. Two ways in which such a prescriptive framework can be of help are firstly, that it can provide formal guidelines for a standard setting body. Secondly, it can help to direct practitioners in the area. An investigation into developing a prescriptive framework begins by making normative decisions on a



few general concepts, and travelling through their implications, to statements of what ought to be done in practice. This approach is termed top-down, deductive, or normative. One of the advantages of this approach is that it offers areas of improvement. It produces simpler concepts. There is no presumption of usefulness of any practice, because it exists and lastly, it does not adhere rigidly to the *status quo*. Disadvantages include the development of a consensus normative reality, such that, when this reality is constructed, it only represents an artificial view of the real world, or comes from an ivory tower.

A conceptual framework created for the third reason, to define commonly-used terms, would be helpful to any standard-setting body and/or practitioner in the field, and carries two major advantages. Firstly, the process will become more efficient, as the practitioners will be able to communicate with each other, on the same basis of understanding. Secondly, a fixed set of definitions allows rules and guidelines, set by the appropriate agency, to be consistent. The main disadvantage is the difficulty in setting the definition, as any definition creates a great deal of debate, concerning the component parts. Lastly, it would be hoped that over time, a consensus definition would be developed for each item.

Miller and Redding (1986) consider that these three purposes for developing a conceptual framework conflict with each other, unless those who are developing the framework agree in advance, on what purpose it is to serve. Overall, these three purposes suggest that the main reason for developing a conceptual framework is to make the implicit explicit, in one way or another, and therefore the conceptual frameworks in corporate financial reporting are found in diagram 2.1 in the implicit/explicit cluster.

This section follows the format of the previous section, with section 2.3.1 summarising some of the most relevant examples of conceptual frameworks in corporate financial reporting. Section 2.3.2 evaluates the success/lack of success of these conceptual frameworks. Section 2.3.3 summarises the discussion.

### **2.3.1 Conceptual Frameworks in Corporate Financial Reporting**

The major developments, with respect to conceptual frameworks in financial reporting, are dealt with in chronological order, and from a mainly UK perspective. Accounting conceptual frameworks in the Anglo-Saxon world, have received much attention in the literature, and there are many comprehensive summaries of them (see Davies, Paterson and Wilson, 1994, and; Mathews and Perera, 1996). Several are considered here.<sup>16</sup>

Probably the first conceptual framework in accounting was in the area of book-keeping and was developed by Pacioli (1494). Edwards (1989) explains that Pacioli's book was published over two hundred years after double entry book-keeping was first practised in Italy. Pacioli describes a double-entry system of book-keeping which uses debits and credits, the memorandum, the journal and the ledger. It seems that Pacioli, a professor of mathematics in Italy, researched accounting practice at that time, and developed a conceptual framework. This framework includes a review of accounting practice and the development of a model, resulting in the implicit double entry book-keeping system being made explicit.

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<sup>16</sup> Of particular importance is the Accounting Standards Board's Statement of Principles (ASB, 1995a), which is the conceptual framework used in this thesis as a basis for comparison with the empirical results and the conceptual framework developed for corporate environmental reporting.

The history of the development of a conceptual framework for financial reporting began in the United States and can be traced back to Paton and Littleton (1940), who attempted to develop a framework of accounting theory. In 1971, the Wheat (1972) and Trueblood (1973) Committees were formed as a result of mounting public criticism about the Accounting Principles Board's inability to establish adequate accounting principles (Davis *et al.*, 1994). The Wheat Committee's recommendations led to the establishment of the Financial Accounting Standards Board (FASB) in 1973. The Trueblood Report considered the objectives of financial reporting<sup>17</sup> and formulated the notion of qualitative characteristics for accounting information.<sup>18</sup>

To Davies *et al.* (1994, page 42) this suggests that :

"The FASB, therefore, saw its conceptual framework project as the means of enhancing the credibility of financial statements in the eyes of the public".

Since its conception, the Financial Accounting Standards Board has issued six statements of financial accounting concepts.<sup>19</sup>

Concept No.1 (FASB, 1978) begins by making it clear that financial reporting should not only include financial statements, but other media for disseminating information about the company, such as stock exchange documents and news releases. It considers that the main objective of financial reporting is to provide information that is useful in making business and economic decisions (see table 2.1 for a comparison with other

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<sup>17</sup> This resulted in the Statement of Financial Accounting Concepts, No. 1, Objectives of Financial Reporting by Business Enterprises.

<sup>18</sup> This resulted in the Statement of Financial Accounting Concepts, No. 2, Qualitative Characteristics of Accounting Information.

<sup>19</sup> However, only statements 1, 2, 5 and 6 are relevant to this thesis as statement 3 was replaced by statement 6 and statement 4 deals with non-business organisations.

**Table 2.1: Financial Reporting Conceptual Frameworks - Main Objectives**

<b>Financial Accounting Standards Board</b>	<b>Accounting Standards Steering Committee</b>	<b>International Accounting Standards Committee</b>	<b>Australian Accounting Research Association</b>	<b>Canadian Institute of Chartered Accountants</b>	<b>Accounting Standards Board</b>
<b>Main Objectives:</b>					
Decision Usefulness	Accountability	Decision Usefulness	Decision Usefulness	Decision Usefulness	Decision Usefulness
	Decision Usefulness	Accountability	Accountability	Accountability	Accountability

corporate financial reporting conceptual frameworks).<sup>20</sup> The Board then develops an extensive list of potential users (see table 2.2 for a list of users and comparison with other corporate financial reporting conceptual frameworks),<sup>21</sup> suggesting that they all share the same information needs, relating to amounts, timing and uncertainties of expected cash flows. However, they did not advocate the use of any form of current value accounting, but left the accounting base open. This concept also suggested that the primary focus of decision-useful information should be from an earnings and its components perspective. Davies *et al.* (1994, page 45) states :

"In other words, the statement is asserting that the measurement of earnings in the income statement should take precedence over the measurements of assets and liabilities in the balance sheet".

The Financial Accounting Standards Board's second concept statement (FASB, 1980) included ten qualitative characteristics (see table 2.3 for a comparison with other conceptual frameworks in financial reporting)<sup>22</sup> with materiality a threshold for recognition, and benefit of the information being greater than the cost of a pervasive constraint. The most significant aspect of this statement is the assertion that (FASB, 1980, parag. 90) :

"Reliability and relevance often impinge on each other".

The suggestion is that trade-offs have to be made between reliability and relevance. This statement consisted mainly of explaining and defining the qualitative characteristics. For further discussion on the qualitative characteristics, see the Accounting Standards Board's Statement of Principles below.

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<sup>20</sup> Adapted from Gore, 1992.

<sup>21</sup> Adapted from Gore, 1992.

<sup>22</sup> Adapted from Gore, 1992.

**Table 2.2: Financial Reporting Conceptual Frameworks - Users**

<b>Financial Accounting Standards Board</b>	<b>Accounting Standards Steering Committee</b>	<b>International Accounting Standards Committee</b>	<b>Australian Accounting Research Association</b>	<b>Canadian Institute of Chartered Accountants</b>	<b>Accounting Standards Board</b>
<b>Specified prime users:</b>					
Present and potential investors Present and potential creditors	None specified	Present and potential investors	Resource providers Recipients of goods and services Parties performing a review or oversight function	Investors Creditors	Present and potential investors
<b>Specified users:</b>					
Suppliers Employees Management Directors Customers Financial analysts and advisors Brokers Underwriters Stock Exchanges Lawyers Economists Taxing authorities Regulating authorities Legislators Financial press and reporting agencies Labour Unions Trade Associations Business researchers Teachers and students The public	The equity investor group The loan creditor group The employee group The analyst-advisor group The business contact group The Government The public	Employees Lenders Suppliers and other trade creditors Customers Government and their agencies The public		Others	Employees Lenders Suppliers and other trade creditors Customers Government and their agencies The public

**Table 2.3: Financial Reporting Conceptual Frameworks - Qualitative Characteristics**

	<b>Financial Accounting Standards Board</b>	<b>Accounting Standards Steering Committee</b>	<b>International Accounting Standards Committee</b>	<b>Australian Accounting Research Association</b>	<b>Canadian Institute of Chartered Accountants</b>	<b>Accounting Standards Board</b>
<b>Qualitative Characteristics:</b>						
<b>UNDERSTANDABILITY</b>	✓	✓	✓	✓	✓	★
<b>RELEVANCE</b>	✓	✓	✓	✓	✓	✓
Predictive value	★		★	★	★	★
Feedback value	★				★	
Confirmatory value			★	★		★
Timeliness	★	✓	★	★	★	★
Materiality	✓		★	★	★	★
<b>RELIABILITY</b>	✓	✓	✓	✓	✓	✓
Verifiability	★			★		★
Neutrality / Objectivity	★	✓	★	★	★	★
Representational faithfulness	★		★	★	★	★
Freedom from error			★	★		★
Prudence	✓		★	★	★	★
Substance over form			★		★	★
Comprehensiveness / Completeness	★	✓	★	★		★
<b>COMPARABILITY</b>	✓	✓	✓	✓	✓	★
Consistency	★		★	★	★	★

**Key:** ✓ - Primary Characteristic  
★ - Co-Characteristic

Statement of Financial Accounting Concept No.6 (FASB, 1985) considers the definition of assets, liabilities, equity, investments by owners, distributions to owners, comprehensive income, revenues, expenses, gains, and losses. Again, this follows a very similar format to the Accounting Standards Board's Statement of Principles (see below). Recognition and measurement (FASB, 1984) described current practice rather than any proposed improvements, and as such, was somewhat inconclusive (see Davies *et al.*, 1994). The statement mainly consists of a series of definitions and tries to define further the qualitative characteristics.

In the United Kingdom, the first initiative towards developing a conceptual framework in financial reporting was the Accounting Standards Steering Committee's (ASSC, 1971) SSAP2, Disclosure of Accounting Policies. This was the most fundamental of the accounting standards issued, as it laid down the foundations of financial reporting. There are three parts to this standard. The first part comprises fundamental accounting concepts which are broad, basic assumptions made when financial accounts are compiled. There are four fundamental accounting concepts, namely going concern, accruals, consistency and prudence. The second part comprises accounting bases, which (ASSC, 1971, parag. 15) :

"... are the methods developed for applying fundamental accounting concepts to financial transactions and items, for the purpose of financial accounts, and in particular (a) for determining the accounting periods in which revenue and costs should be recognised in the profit and loss account, and (b) for determining the amounts at which material items should be stated in the balance sheet".

The third part comprises accounting policies which are the accounting bases chosen by management as an appropriate means of representing fairly the financial results of the enterprise. The different accounting bases and subsequently, policy choice, give rise to so-called creative accounting. It is particularly relevant that the first sentence of SSAP2



(ASSC, 1971) states:

"It is fundamental to the understanding and interpretation of financial accounts that those who use them should be aware of the main assumptions on which they are based".

This suggests that this statement of standard accounting practice intends to make the implicit explicit.

The Corporate Report (ASSC, 1975), from the perspective of this thesis, is probably the most important development in financial reporting. Not only did it represent the first conceptual framework in financial reporting in the UK, but it also suggested extending the possibility of companies' reporting responsibility beyond the investor-creditor grouping (in diagram 2.1 the Corporate Report is placed in the implicit/explicit cluster as one of the characteristics of this cluster concerns policy recommendations which may for example lead to prescriptions for future practice. Most importantly, for the purposes of this thesis, (ASSC, 1975, para. 0.2) :

"The form of report with which we are dealing we have termed the 'corporate report', by which we mean the comprehensive package of information of all kinds which most completely describes an organisation's economic activity. It will include more than basic financial statements, by which we mean those statements required to be published by law or other competent authority and which are primarily concerned with reporting financial transactions and positions".

The Corporate Report is divided into three parts. The first part is entitled "Concepts and Aims" and is divided into four sections. Section one deals with the basic philosophy of the study. Here, they discuss the concept of the public accountability of corporations, which is wider than the legal obligation for them to report, and very much akin to an early stakeholder philosophy (see table 2.1). They also consider user needs in this section. Section two deals with users, their information needs and rights to information. The Corporate Report identifies seven broad user groups (see table 2.2). In section three,

"The Objective of Corporate Reports", it is stated that (ASSC, 1975, parag. 3.2) :

"The fundamental objective of corporate reports is to communicate economic measurements of and information about the resources and performance of the reporting entity useful to those having reasonable rights to such information".

In order to achieve this, they suggest that there are seven desirable qualitative characteristics (see table 2.3). Section four reviews the contemporary state of corporate reporting. This section incorporates the results from a mail questionnaire survey (response rate 55%) which asked the respondents about their responsibilities towards various groups. The company directors recognised a responsibility to employees (71%), shareholders (69%), customers (53%), the community (28%), and the environment (7%).

Part two, entitled "Measurement and Method", is divided into three sections. This section deals with the ways in which the concepts and aims discussed in part one can be practically achieved. Section five considers "Communication, Publication, Frequency and Distribution". Section six, "The Scope and Contents of Corporate Reports", deals with the drawbacks of the contemporary system, suggesting the introduction of six new statements<sup>23</sup> and the call for research into social accounting. Section seven, "Concepts and Measurements in Financial Statements", considers the profit and loss account, the balance sheet, and the statement of sources of application of funds. This section also considers the concepts in SSAP2 and accounting bases of measurement. These bases of measurement are historic cost (this includes historic cost and current purchasing power), and current value (including replacement cost, net realisable value, net present value, and value to the firm). The conclusion is that no system is capable of meeting users' needs. It is suggested that research be conducted into a multi-column report format. Further, it

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<sup>23</sup> The statements suggested were a value added statement, employment report, statement of money exchanges with government, statement of transactions in foreign currency, statement of future prospects, and statement of corporate objectives.

is suggested that the current value method, accompanied by the use of a general index, is likely to be the most useful and that this should be researched.

This conceptual framework, in essence, is similar to those discussed in section 2.2. An implicit framework is being made explicit, with recommendations for future practice. There is some empirical work, current practice is surveyed, and basic principles as to what is required are also suggested. Interestingly, the different accounting bases can each be said to represent a different conceptual framework, and The Corporate Report considers each in turn (see Huegy, 1963; Nye and Berardo, 1966 and; Cook and Berrenberg, 1981, for similar approaches). The Corporate Report makes a policy recommendation for a change from the *status quo*, based on historic cost, to current value and a general index. Also, it is suggested that new statements be introduced. The implicit is made explicit, inadequacies are discussed openly, and policy recommendations are made. This conceptual framework attempts to clarify the situation and investigates competing conceptual frameworks related to accounting bases.

Later that year, the Sandilands Report (Sandilands, 1975) on inflation accounting was published. Often overlooked as a conceptual framework in financial reporting textbooks (see for example, Underdown and Taylor, 1985, and; Elliott and Elliott, 1997) it has many characteristics which suggest that it does represent a conceptual framework in the area. The Sandilands Committee's remit was to find a suitable method for companies to reflect the effect of inflation on their financial statements. The Committee began by considering the legal paradigm for corporate financial reporting. This was similar to a literature review, and a summary of history/current practice of disclosure. They also

considered who the users of financial reports are, settling on nine groups.<sup>24</sup> They also considered the information needs of these groups, which included: measurement of assets; clarification of gains and the concept of profit, and; the liquidity position of the company.

The Committee suggested that there are seven qualitative characteristics to financial disclosure.<sup>25</sup> Their main objective was to find an acceptable accounting base, which suitably took into account inflation. In order to do this, they considered several accounting-based paradigms for financial reporting. These were: historic cost accounting, including modifications to historic cost, and current purchasing power; value accounting, including replacement cost, present (or current) value accounting, continuously contemporaneous accounting; cash flow accounting, and; current cost accounting. Current cost accounting was their policy recommendation.

The next major conceptual framework in the UK arose from the Macve Report (Macve, 1981). The terms of reference given to Macve by the Accounting Standards Committee, the sponsors of the report were (Macve, 1981, page 3) :

"... to review critically current literature and opinion in the UK, US and elsewhere, with a view to forming preliminary conclusions as to the possibilities of developing an agreed conceptual framework for setting accounting standards and the nature of such a framework; and to identify areas for further research".

These terms of reference are in line with the conceptual framework methodology discussed earlier in this chapter. Most importantly, this conceptual framework has a very

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<sup>24</sup> These are investment analysts, the City, creditors and lenders, other companies, employees, management, the government and official bodies, and the general public.

<sup>25</sup> These are: objectivity, realism, prudence, comparability, consistency, intelligibility and ease, and economy in preparation.

different emphasis from the other accounting conceptual frameworks, but is similar to those discussed in section 2.2.1. Macve (1981, page 72) states:

"... a conceptual framework must be seen as a framework for investigation and research into solutions; not as a package of solutions".

This is a very important statement, as a conceptual framework in financial reporting is often seen as a way of solving the various problems in accounting. Notably, this is the only UK official conceptual framework report which begins by considering what a conceptual framework actually is, and why it is needed. Macve (1981, page 22) introduces the notion of making implicit accounting practice explicit :

"Anyone recommending a particular accounting practice must necessarily base his views on an implicit conceptual framework - and it is therefore important, if there is to be rational discussion and evaluation of the proposal, to try and make that framework explicit".

The discussion turns to the contemporary accounting model, thereby making the implicit explicit. In the traditional methodology for developing a conceptual framework for financial reporting, an important component involves a discussion of the elements (assets, liabilities, etc.), in terms of defining them (Macve, 1981, page 30) :

"... there can be no 'correct' definitions of how 'profit', 'net assets' etc. are to be calculated".

Although there may be no correct definition, there may be a series of agreed definitions which represent a starting place for discussion.

Macve then considers useful accounting information, with the main objective being decision usefulness. He does not draw a distinction between decision usefulness and accountability, considering that in order to be made accountable, a decision has to be taken. He then defines the "elements" of a conceptual framework in financial reporting,<sup>26</sup>

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<sup>26</sup> Note these are not the elements of assets, liabilities, etc., used by the Financial Accounting Standards Board and the Accounting Standards Board.

as: identification of potential users; identification of the decisions they need to make; identification of the accounting information that can be provided, and; comparison of the benefits of providing the accounting information with the cost of doing so, choosing the alternative with the greatest benefit in excess of cost. After developing a reality, he suggests what improvements need to be made to the model. The main difficulty was the variety of user needs and conflicts of interest that arose. Macve then surveys the literature in the area, essentially other conceptual frameworks and reports in financial reporting. He considers the implications for financial reporting, and states (Macve, 1981, page 83) :

"This is a view of a conceptual framework for accounting theory primarily as an aid to suggesting what are the important questions to try and answer rather than providing a formula or set of formulas such that solutions to particular accounting problems can be readily derived".

He then goes on to make his policy recommendations for further research, which focus on conflicts of interest and the variety of users' needs, suggesting that the content of financial statements, and hence a conceptual framework, is as much a political process as it is a search for technically best methods. Macve (1981, page 52) states :

"Given that the theories of politics and social choice themselves have no 'agreed conceptual framework', then by implication accounting, in this respect, has to cope without one as well".

For Macve, the difficulty was finding an agreed conceptual framework, not that there were few, or that he had a problem with a conceptual framework methodology *per se* (see Macve, 1997).

The "Guidelines for Financial Reporting Standards" (Solomons, 1989) avoid the use of the term "conceptual framework" in the title. This omission is not discussed in the guidelines, perhaps due to the controversy surrounding the term, and the need to explain what it means and what it aims to achieve. The Solomons guidelines incorporate the

*status quo* areas in a conceptual framework methodology for financial reporting, which can be termed the traditional approach. Solomons (1989, page 1) states :

"The freedom of choice that is left to executives in how they report financial results has, however, over the years been increasingly constrained by a growing body of 'generally accepted accounting principles'..."

He then discusses the existence of an implicit framework for the regulation of financial reporting (Solomons, 1989, page 4) :

"The aim of this paper is to provide the ASC with an explicit framework, or at least parts of one, that could reinforce the implicit framework where it is found to be sound, and could replace it where it is found to be defective".

The users of general purpose financial reports and their needs are then considered and four groups of users<sup>27</sup> are listed, suggesting that they need the information for decision-making purposes. Solomons then considers briefly how users' needs for financial information are met at present. He discusses financial statements and their elements, preferring the asset and liability view, i.e. the balance sheet, in preference to the revenue and expenses view, the profit and loss account, and refers to elements and sub-elements.<sup>28</sup> In relation to the qualitative characteristics of accounting information, 12 are proposed.<sup>29</sup> Also, recognition and measurement are considered, and he looks at the criteria for recognition, discretionary aspects of recognition, and pseudo-assets. Lastly the choice of a general purpose accounting model is discussed with the conclusion that (1989, page 49) :

"The model that underlies GAAP at the present time is not adequately described by calling it a 'historical cost' model".

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<sup>27</sup> present and potential investors, present and potential creditors (including suppliers), present and potential employees, and present and potential customers.

<sup>28</sup> These include: assets, liabilities, revenue and gains, expenses and losses, owners' equity, and income.

<sup>29</sup> Relevance, predictive value, confirmatory value, corrective value, timeliness, reliability, representational faithfulness, comprehensiveness, verifiability, consistency, neutrality, and feasibility.

He describes his perceived problems with this model, and provides criteria for an improved model, which he calls a "current-cost-constant-purchasing-power model". Solomons, therefore, is suggesting a different accounting base. Interestingly, at the end of the guidelines, a glossary of terms is provided, which is an essential characteristic for the development of a conceptual framework in a maturing discipline (see section 2.2.1).

Notably, this set of guidelines is very similar in approach to the previous studies described. Unsurprisingly, Solomons was a consultant to the Financial Accounting Standards Board's conceptual framework project, and was principal author of their concept statement, "Qualitative Characteristics of Accounting Information" (FASB, 1980).

One indication of a mature discipline, as discussed in section 2.2, is a comparison of competing conceptual frameworks. This can be seen in Sherman (1984), who edited a book which considered three views of a conceptual framework in financial reporting, in which: Anthony (1983, 1984) fundamentally based his conceptual framework on revenues and expenses; Sprouse (1984) discussed the Financial Accounting Standards Board conceptual framework project which, at its base, are assets and liabilities, and; Ijiri (1983, 1984) differentiates between accountability and decision-usefulness, suggesting the accountability approach is superior. Essentially, the conceptual frameworks differ according to their objectives and accounting bases.

The Accounting Standards Board (ASB, 1995a) has developed a conceptual framework in draft form which is used to underpin its standards. This conceptual framework is based on the work of the Financial Accounting Standards Board in the USA. The Board have opted not to use the term "conceptual framework" but Statement of Principles.



There are seven chapters in the Statement of Principles.<sup>30</sup> The following is a brief review of the Statement of Principles. Chapter one of the Statement of Principles states (ASB, 1995a, parag. 1.1) :

"The objective of financial statements is to provide information about the financial position, performance and financial adaptability of an enterprise that is useful to a wide range of users for assessing the stewardship of management and for making economic decisions".

Table 2.1 compares the objectives of the Accounting Standards Board's conceptual framework with several other financial reporting conceptual frameworks. Information on the financial position, performance and financial adaptability of an enterprise, is represented by the balance sheet, profit and loss account, movement in reserves and the cash flow statement. The Statement of Principles also lists the users of financial statements. This is the familiar list which can be compared with other financial reporting conceptual frameworks list of users in table 2.2.

The second chapter considers "The Qualitative Characteristics of Financial Information". These, again, follow the Financial Accounting Standard Board's conceptual framework, but with some reclassification of the characteristics (see table 2.3 for a comparison with other financial reporting conceptual frameworks). Definitions of the qualitative characteristics can be seen in appendix A. The Board begins by discussing materiality which is seen as a threshold quality, with relevance (predictive value and confirmatory value) and reliability (faithful representation, substance, neutrality, prudence and completeness) being related to content. Presentation is suggested as the qualitative characteristics of comparability (consistency and disclosure) and understandability

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<sup>30</sup> Note that chapters one and two were exposure drafts at the start of the thesis and chapters three and four only discussion papers. The Accounting Standards Board Statement of Principles has been revised several times since the first chapters were published in 1991. The latest versions are presented here. The final questionnaire is based on the then exposure drafts, which are fundamentally the same as the other drafts.

(aggregation and classification, and users' ability). There is recognition of the so-called trade-off between qualitative characteristics, suggesting that there is a trade-off between relevance and reliability, as well as other qualitative characteristics. There is also discussion of the timeliness and benefit and cost of disclosure. Lastly, the Board discussed the overriding requirement of a true and fair view.

In chapter three, "The Elements of Financial Statements" are discussed. These are the items that could appear in the financial statement. They are: assets, liabilities, equity, gains, losses, contributions by the owners, and distribution to owners, all of which are defined in appendix A. As can be seen, definition is an important part of all conceptual frameworks and the Board has established working definitions of the items in financial statements.

Chapter four, "The Recognition of Items in Financial Statements", gives guidance on the items that should appear in financial statements. The criteria for recognition are: the item meets the definition of an element; there is sufficient evidence that there has been a change in the asset or liability, and; the item can be measured in monetary terms with sufficient reliability.

Chapter five, "How Net Resources are to be Measured", considers the different valuation methods which can be used for reporting financial performance. The Board considers mainly historical cost and current value, suggesting that current value provides the information that is most relevant to users' decisions. The most interesting aspect of this is that the Board considers the major area of disagreement with the current state of financial reporting to be the different measurement bases.

In chapter six, "Presentation of Financial Information", the Board puts forward how financial statements should be presented to meet the objectives set out in chapter one of the Statement of Principles. The Board begins by discussing basic financial accounting practice, such as aggregation, classification in the balance sheet. The Board also discuss the main financial statements, staying within the *status quo*.

In chapter seven the Board presents "The Reporting Entity", which essentially deals with companies producing accounts both as individual entities and by consolidation as parents of groups.

As can be seen, the Statement of Principles is similar in both content and format to the other official conceptual frameworks in financial reporting, with the Board itself stating that (ASB, 1996, page 2) :

"Indeed, the ASB's statement is based on the IASC's and FASB's statement and its content is similar to theirs".

In common with other approaches, the Accounting Standards Board suggests that the Statement of Principles is designed to provide a coherent framework of reference including a set of definitions and in developing the Principles, the Board considered explicit and implicit accounting practices, concluding that these were inadequate. As a result, they set themselves five objectives in order to improve the reporting framework (ASB, 1996). It would therefore seem that the Statement of Principles developed by the Board does not just represent current reporting practice, but also a framework of future practice. This may be why not everyone is in total agreement with the Statement of Principles (see Davies *et al.*, 1994) as it represents a normative state of affairs which the Board would like to see in the future. To all intents and purposes, it may be suggested that a *status quo* exists in the UK official financial reporting conceptual frameworks as

to the taxonomy used, i.e. objectives, qualitative characteristics, elements, etc. The debate is very much about what reality should be represented for each of the classifications.

As indicated above, other conceptual frameworks exist such as the International Accounting Standards Committee conceptual framework (IASC, 1989), those in Canada (CICA, 1988), and Australia (AARF 1987, 1988a, 1988b, 1990, 1992). They are all relatively similar (for further details see Davies *et al.*, 1994; Elliott and Elliott, 1997, and; Mathews and Perera, 1996) to each other.

As well as the official conceptual frameworks in corporate financial reporting, a series of competing approaches has been proposed. Ijiri (1983) has discussed an accountability based approach, where he distinguishes between a decision based framework, which is user-oriented and uni-directional, and an accountability based framework, which is bi-directional. Power (1993) discusses an approach based on jurisprudence, and uses Rawls' (1973) reflective equilibrium. Archer (1993) combines a jurisprudence approach with Ijiri's accountability approach, rejecting the normative and deductive approach, or hard system, in support of a soft system methodology. Higson (1997) proposes an alternative basis for the construction of a conceptual framework in corporate financial reporting. He questions whether stewardship and/or decision-making are appropriate objectives in today's commercial environment and suggests that these are now outdated as objectives, in that today they should be derived from communication theory. Bryer (1998) takes a Marxist view. He considers the Financial Accounting Standards Board's conceptual framework project as subjective and vague, and, using Marxist theory provides "Accounting with a Scientific Foundation". He does this by changing the definitions of

assets and liabilities, thus creating a different reality. The adoption of any of these alternative approaches would result in a major upheaval of the *status quo* for financial reporting. They are, therefore, unlikely to be adopted seriously, in the near future. A more conservative approach is therefore, to work within current bounds.

### **2.3.2 An Evaluation of the Use of Conceptual Frameworks in Financial Reporting**

This section discusses three issues in evaluating the use of conceptual frameworks in corporate financial reporting. The first issue considers the need for developing a conceptual framework in financial reporting, focusing on the overall aim of raising the quality of financial reporting. The second issue concerns the limitations of developing a conceptual framework in financial reporting. This evaluation deals mainly with the Accounting Standards Board's Statement of Principles and where appropriate the Financial Accounting Standards Board's conceptual framework project, as these two represent the main literature in the area. The third issue involves evaluating the success or lack of success that conceptual frameworks appear to have had in raising the quality of financial reporting. This discussion is useful in relation to the current thesis, as it indicates how a conceptual framework can be used to increase the quality of financial reporting, and this may be transferable to corporate environmental reporting.

#### *The Need For a Conceptual Framework for Financial Reporting*

With respect to the need for a conceptual framework in financial reporting, the Accounting Standards Board (ASB, 1996) acknowledges that the Dearing Report (Dearing, 1988) suggests a conceptual framework be developed. The underlying

assumption is that such a conceptual framework would raise the quality of financial reporting. The Board also acknowledges that other countries, such as the USA, and international institutions such as the International Accounting Standards Committee have established conceptual frameworks. Again, the main emphasis of these was to raise the quality of financial reporting. There is little doubt that the Statement of Principles has resulted in sensible debate, as the Accounting Standards Board (ASB, 1996) responded to many of the criticisms of the exposure draft, thereby clarifying its position and allowing debate to continue. A great deal of interest has been expressed in the Statement of Principles both in the press and from a record number of letters to the Board. These letters generally express support for a Statement of Principles (ASB, 1996). This implies that interested parties have a need for such a framework.

Also, Mathews and Perera (1996) support the need for a conceptual framework in corporate financial reporting, as they suggest that it would: provide guidance to standard-setting bodies; increase the understanding of financial statements; increase the confidence in financial statements by agreeing definitions and qualitative characteristics, and; increase compatibility between company accounts reducing alternative treatments. Achieving these by the implementation of a conceptual framework should lead to an overall improvement in the quality of financial reporting.

There are many alternative views regarding the reasons why the Financial Accounting Standards Board's conceptual framework project exists. Miller (1995), for example, suggests that the Financial Accounting Standards Board's conceptual framework project represents an integrated accounting theory and sees it in terms of a set of political expressions. Further, Miller (1995, page 86) states:

"In contrast to those that consider the framework to be innocuous or weak, this paper's thesis is that it contains much that would lead to substantial reform in accounting practice".

An alternative point of view is provided by Hines (1989) who considers the conceptual framework project in terms of providing legitimisation to the accounting profession and standard-setting bodies, in order to avoid government intervention or competition from other professional bodies. She applies this to all financial reporting conceptual framework projects. Hines suggests that the major rationale for financial reporting conceptual frameworks throughout the world was not functional or technical but a strategic manoeuvre to provide legitimacy to standard-setting bodies and accounting professionals during periods of threatened government intervention or competition from other accounting bodies. In other words, Hines seems to consider that a conceptual framework would not result in a higher quality of financial reporting, as she does not think this is its main function or aim.

#### *Limitations of Developing a Conceptual Framework for Financial Reporting*

There are many limitations to developing a conceptual framework in corporate financial reporting. In addition to the reasons given in section 2.2.1, and those cited by Miller and Reading (1986) in section 2.3.1 are the following (Mathews and Perera, 1996): the time and cost of preparation; the suggestion that rigidity might be applied to accounting and standard-setting; possible conflicts between established standards and the framework (see Daley and Tranter, 1980) and; that a conceptual framework may only benefit the most powerful user groups.

One of the limitations cited by Miller and Redding (1986) of developing a conceptual framework in financial reporting is that the three reasons (discussed earlier) for developing a conceptual framework are incompatible. The discussion of financial reporting conceptual frameworks supports Miller and Redding's three purposes of a conceptual framework. It would seem, however, that they have been too general in their stated purpose of a conceptual framework, as their views are inconsistent with some of the conceptual frameworks surveyed in section 2.2.1, but consistent with those surveyed in section 2.3.1, and the implicit/explicit cluster suggested in the conceptual framework continuum. Miller and Redding's "description of existing practice" can be seen in terms of making the implicit explicit, "prescription of future practice" can be seen in terms of policy recommendations, and "definition of commonly used terms" can be seen in terms of development of a common terminology. Therefore, by moving on to the empirical cluster, a conceptual framework methodology can at least begin to deal with the incompatibilities that Miller and Redding see between the three purposes they suggest.

There is also considerable debate concerning the Accounting Standards Board's Statement of Principles. Archer (1996) finds six major inadequacies with the Statement of Principles. Of particular significance are (Archer, 1996, page 16) that :

"The Principles consist of nothing more than normative accounting theory".

and (page 18) :

"The use of the role of values in financial reporting requires separate, empirical-based enquiry".

This highlights two very important points: first, that modelling, unless subjected to the rigours of empirical testing, remains normative, and; second, that the empirically based



enquiry is a very important part of discovering the level of consensus, which lends support to the methodological approach adopted in this thesis.

Mumford (1996) also, finds several major inadequacies with the Statement of Principles, including: the recurring problem of which accounting base to use, and of which valuation model to use, and; the superiority of the balance sheet in favour of the profit and loss account. He believes that the Statement of Principles presents current accounting practice in an unfavourable light. The Statement of Principles, in his view, does not reflect current practice but rather represents a future type of practice that the Board wishes to introduce.

Paterson (1996) in an open letter to the Accounting Standards Board, discusses three aspects of the Principles which Ernst and Young (the Accounting firm which he is employed by) are not in favour of. Ernst and Young are not advocates of the Statement of Principles in its current form and have made this public knowledge (see Kelly, 1996). Again, two common areas where they disagree with the Statement of Principles are: the relative importance of the balance sheet and; which accounting base to use.

### *Evaluating the Success or Lack of Success of Conceptual Frameworks in Raising the Quality of Financial Reporting*

As discussed above, one of the main reasons for needing a conceptual framework in financial reporting is to raise the quality of financial reporting. Therefore, it is useful to evaluate whether or not conceptual frameworks, in particular the current UK conceptual framework, have been successful in achieving this aim. As can be seen in diagram 2.1

all the financial reporting conceptual frameworks have been placed in the implicit/explicit cluster, suggesting that prescribing future practice is a major reason for developing them. The main reason for prescribing future practice is that it should lead to improvements in the quality of financial reporting. There is no doubt that accounting practice has changed since the introduction of the Statement of Principles (ASB, 1995a), but it is debatable whether this has improved the quality of financial reporting. Paterson (1996), as discussed above, shows that the current conceptual framework has not been warmly received, as some appear to consider that it has not improved the quality of financial reporting. Evidence supporting the current conceptual framework is scant, perhaps because academics and practitioners concentrate more on criticism of new endeavours than on their success. However, overall it would seem that the conceptual framework in financial reporting has helped in guiding standard-setting bodies, such as the Accounting Standards Board. It has also gone some way in: increasing the understandability of financial statements; opening up the debate on definitions within the framework; making financial reports more comparable by reducing treatments, and; addressing the qualitative characteristics of financial reporting.

## **2.4 The Application of the Conceptual Framework Methodology in Environmental Reporting**

After evaluating conceptual frameworks in financial reporting, this section now considers the conceptual framework methodology for environmental reporting. As environmental reporting is relatively new, section 2.4.1 discusses only three examples of the conceptual framework methodology applied to corporate environmental reporting. Section 2.4.2 evaluates them and section 2.4.3 summarises the section.

### **2.4.1 Conceptual Frameworks in Environmental Reporting**

Gray, Dey, Owen, Evans and Zadek (1996b) suggest that a conceptual framework for corporate social reporting<sup>31</sup> can provide some guidance as to best practice. Their framework falls into the ideological cluster (see diagram 2.1) and is normative in nature, representing key elements in an ideal type of social account. They imply that their objective is accountability and suggest that information should possess the characteristics of completeness, reliability, verifiability, consistency, comparability and understandability. However, overall, this conceptual framework does not follow the taxonomy of the financial reporting conceptual frameworks discussed in section 2.3.1.

Schulze and Colby (1996) develop an advanced conceptual framework for environmental information in decision-making for the Environmental Protection Agency in the United States.<sup>32</sup> The authors begin by using the literature to formulate the paradigm in which they wish to develop a conceptual framework, acknowledging that any paradigm immediately excludes any other reality. They then discuss the need for a conceptual framework in the area. Schulze and Colby consider three existing environmental information frameworks, used by national and international agencies. The first includes models of decision-making processes or strategies. These define, for example, relationships between indicators, social values and/or policy goals, such as the Environmental Protection Agency's Environmental Monitoring and Assessment Programme. The second framework involves "causal" frameworks, which classify environmental problems in terms of the overall causal flow/environment interactions, for

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<sup>31</sup> Environmental reporting can be regarded as a category of corporate social reporting.

<sup>32</sup> From an accountancy perspective, this represents an important paradigm, as decision-making is not only an objective for this conceptual framework, but also in the Accounting Standard Board's (ASB, 1996) Statement of Principles.

example, the Organisation for Economic Cooperation and Development's (OECD) pressure state response framework. Thirdly, there are spatial frameworks, which classify the land areas of interest where environmental problems occur, for example, eco-based assessment such as the United Nations Educational Scientific and Cultural Organisation's (UNESCO) terrestrial-based classification system.

Schulze and Colby combine the pressure state response framework and the eco-system based assessment framework, creating a hybrid. This framework also incorporates the decision-making model. They then develop a typology and a common language for the area, to avoid misunderstanding. The typology combines the above models, creating the conceptual framework which is divided as follows: pressures on the environment; human health and welfare; societal responses to environmental change, and; relationships among pressures, states and/or responses. Lastly, they consider how to operationalise the framework using the decision-making model. This is a two-stage conceptual framework, whereby the choices made in the decision-making model affect the hybrid framework.

This is an example of a conceptual framework which can be placed in the implicit/explicit cluster (see diagram 2.1). They use existing frameworks and attempt to harmonise them into a single model, much in the same way as Key and Scott (1991).

The Canadian Institute of Chartered Accountants (CICA, 1994) have produced a Report which advocates a framework for corporate environmental reporting, and which follows the taxonomy of the implicit/explicit financial reporting conceptual frameworks discussed in section 2.3.1. The objective of the reporting framework is decision-usefulness. The Report suggests that the users of environmental information are:

employees, the investment community, creditors, government, communities, suppliers, customers, consumers, and other users. The Report also advocates that information should have the following qualitative characteristics: relevance, reliability, understandability, and completeness. It then considers appropriate elements such as inputs (natural resources and land), outputs (products, by-products and services), impacts (emissions, discharges, wastes, noise, odour and dust), and effects (well-being of people, plants and animals).

The development of this framework involved surveying the views of user groups which involved interviews and mail questionnaires. Industry representatives were also interviewed. The framework includes a bibliography. The Report proposes a framework for corporate environmental reporting which represents best practice at that time. The authors of the Report have therefore considered the implicit framework and have made it explicit. However, the Report is based on a framework which has been subjected to empirical research. Therefore, it is a conceptual framework which can be best placed in the empirical cluster (see diagram 2.1).

#### **2.4.2 An Evaluation of the Use of Conceptual Frameworks in Environmental Reporting**

The conceptual frameworks discussed above have all made contributions to corporate environmental reporting, in that they have attempted to clarify debate. This is a very important contribution to the area. Without this type of work, it is difficult to appreciate how corporate environmental reporting has developed, and what direction it should follow in the future. The authors of each framework suggest that there is a need for such

frameworks in order to give guidance to company management as to how best they should report their companies' environmental performance. One limitation raised by the authors is that because the area is so new, it is inevitable that their frameworks will need to be changed. Their acknowledgement that a conceptual framework should not remain static can be interpreted as a strength of the conceptual framework approach as it gives a dynamic emphasis to its development, as discussed earlier.

## **2.5 The Present Conceptual Framework for Corporate Financial Reporting in Relation to Environmental Reporting**

This section compares the present conceptual framework for corporate financial reporting with environmental reporting. The point of comparison is the Accounting Standards Board's Statement of Principles (ASB, 1995a). Four aspects of the Statement of Principles are used as a basis for investigating similarities to the implicit corporate environmental reporting conceptual framework. These are objectives, users, qualitative characteristics and elements. These aspects of conceptual frameworks are also being applied, by professional accounting bodies, in other countries, when developing their frameworks. If relationships can be found between financial and environmental reporting, then this may lead to a more comprehensive form of accountability in the near future.

The objectives of financial reporting are associated primarily with user needs. In this survey, objectives and users have been separated to aid clarity. As can be seen from table 2.1 all the financial reporting conceptual frameworks summarised advocate decision usefulness, as a main objective. In the case of the Financial Accounting Standards Board, it is the only objective. The Accounting Standards Steering Committee placed

an increased emphasis on accountability, whereas the other conceptual framework projects all favour decision usefulness.

Support for a conceptual framework in financial reporting (based on a decision usefulness approach) can be found in Macve (1981), Solomons (1989) and the Accounting Standards Board (ASB, 1995a). Of relevance to this thesis, is that all these authorities consider that an implicit conceptual framework, in financial reporting exists, and that it should be transformed into an explicit framework. As far as the Financial Accounting Standards Board is concerned, the overriding primary objective is stated as follows (FASB, 1978, paragraph 34):

"Financial reporting should provide information that is useful to present and potential investors and creditors and other users in making rational investment, credit and similar decisions".

This objective elevates economic users to the highest level of priority, which has remained undisturbed until now. In contrast to this the Corporate Report (ASSC, 1975) introduced the notion of public accountability by corporations, in a decision useful framework. The basic philosophy underlying the Corporate Report was to produce general purpose reports for general purpose use (ASSC, 1975, paragraph 1.5) :

"In this context, public accountability does not imply more than the responsibility to provide general purpose information. Whether or not subsequent questioning or action results will depend on the circumstances and reactions of users. User groups are able to exert pressure if they so desire either by direct action (as in the case of shareholders who are able to vote at general meetings) or indirect action through the market place (as in the case of consumers in purchase decisions). Information is valuable to the extent that it enables users to judge whether or not it is appropriate to exert such pressure".

The development of a conceptual framework for corporate financial reporting has concentrated on the needs of the financial community, especially equity investors and the decisions they need to make, i.e. whether to buy, sell, or hold stock. The typical

investor model follows profit maximisation, as the main goal (see Underdown and Taylor, 1985). Therefore, the objectives are based on decision usefulness and accountability, according to an economic criterion. The application of a decision usefulness and accountability approach to corporate financial reporting does not render this approach null and void for corporate environmental disclosure.<sup>33</sup> This can be seen in the Corporate Report (ASSC, 1975) with the development of public accountability. Public accountability is the disclosure of information about the stewardship of resources, by management. The division of objectives in this way, implies that differing disclosure is required. The distinction between the two objectives is not pursued in the current study, as there is little, or no, justification for why anybody would want information, unless it was to make a decision. In support of this, Macve (1981, page 34) states :

"It may be objected that people do not only, or mainly, read accounts to assist them make their financial decisions; but rather to check on the honesty and stewardship of management; to confirm compliance with company law; to check the reasonableness of the dividend being declared and so forth. This is an empty objection, as is readily seen if it is accepted that no one would read the accounts for these purposes unless there was some possibility of *doing something about it*; in other words, the possibility of making a decision".

Set in terms of environmental reporting, an interested party is only likely to find corporate environmental disclosure useful if a decision can be made, even if the decision is to declare that this company has discharged its accountability to society.

The problem is that decision usefulness actually refers to economic decision usefulness, and this is not necessarily the best basis for a conceptual framework in corporate environmental reporting. The conceptual framework presented by the Accounting Standards Board is based on economic decision usefulness, and they state (ASB, 1995a,

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<sup>33</sup> for Gray et al.(1987a), it does as they reject economic decision usefulness and user needs.



paragraph 1.1) :

"The objective of financial statements is to provide information about the financial position, performance and financial adaptability of an enterprise that is useful to a wide range of users for assessing the stewardship of management and for making economic decisions".

The term, "accountability decision usefulness" will be used in chapter four to develop a model with two components, a corporate environmental disclosure component and a corporate environmental reporting component. This model is based on a perceived accountability by companies, suggesting that they should report decision useful information. Therefore, it should not be assumed that an economic decision useful conceptual framework, for financial reporting, suggests an economic decision useful conceptual framework for environmental reporting. This is not the goal of the thesis. The goal is to develop a complementary conceptual framework, which is based on accountability decision usefulness, and not entirely on economic considerations.

The objective for a conceptual framework for this study is a decision useful approach. This is, however not solely in terms of economic decision usefulness, but accountability decision usefulness. Together with financial reporting, a "comprehensive accountability" framework can be developed. For both types of conceptual framework to be compatible, they need to share objectives. Therefore, a decision useful approach would provide such compatibility, thereby initiating the process of comprehensive accountability. The discussion now moves on to a consideration of the different users of financial and environmental information.

The most important aspect of a conceptual framework is the establishment of who the users of the disclosure are likely to be. Table 2.2 illustrates the spectrum of users. As can be seen, the emphasis is very much on the financial community. The users in a

conceptual framework for corporate environmental reporting are likely to represent a broader spectrum of society, yet still include the financial community (see Gray, Owen and Adams, 1996a). If there is evidence to suggest that financial and environmental reporting have similar user groups, then this provides further support for the use of a decision usefulness framework, in environmental reporting.

Qualitative characteristics are quintessential to conceptual frameworks in financial reporting. The qualitative characteristics represent an organised attempt to define the constituent components of useful information. Qualitative characteristics do aid an understanding of what information is useful, but only on a superficial level (see Macve, (1981) for problems with qualitative characteristics). Table 2.3 summarises the qualitative characteristics from the six conceptual frameworks considered. It is notable that the only two primary characteristics, upon which they all agree, are relevance and reliability.

In order to develop a comprehensive accountability framework, it is necessary that there is some compatibility between the two conceptual frameworks. The qualitative characteristics provide a third area of overlap. If a financial reporting conceptual framework can be shown to share the same qualitative characteristics of useful information, as that of an environmental reporting conceptual framework, then the building blocks will begin to emerge. The compatibility of financial reporting qualitative characteristics with environmental reporting are discussed in Gray *et al.* (1987a, 1996a and 1996b).

The elements in financial reporting<sup>34</sup> represent what is measured, and therefore, what is disclosed and reported. What cannot be measured at this point is omitted and therefore not disclosed. In financial reporting these elements include assets, liabilities, ownership interest, gains, losses, contributions from owners, and distributions to owners (see ASB, 1995a).

Where economic decision usefulness is required for environmental reporting, the elements discussed above may be adequate. However, where accountability decision usefulness is required, new elements, based on other measurement criteria, may be required. For example, elements of air, land, and water may be useful, not only disclosed in financial terms, but perhaps also on qualitative and quantitative terms. Other examples of possible elements include, the identity of the pollutant, the actual pollutant, and/or the nature of the target which is being protected.

The emphasis in this section has been placed on possible similarities between environmental and financial reporting, in the context of a conceptual framework. This section has established a framework based on objectives, users, qualitative characteristics and elements as a basis for determining the degree of similarity between environmental and financial reporting.

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<sup>34</sup> The actual definition of each of the elements of financial reporting have proved very difficult to develop, especially in an international context.

## 2.6 Conclusion

This chapter has considered extant conceptual frameworks from 14 different disciplines in order to act as a basis for the development of a conceptual framework in corporate environmental reporting. The survey of conceptual frameworks in this chapter has indicated that there is an implicit methodology for developing a conceptual framework which may be applied in any discipline. This methodology seems equally applicable to the area of corporate environmental reporting, as a means of exploring the level of consensus between parties, and in enabling the implicit to be made explicit. This has been interpreted in terms of clusters on a continuum. In this thesis, the methodology coinciding with the empirical cluster is adopted, and the main characteristics of this cluster are represented by the remaining chapters of the thesis, as follows. Chapter three surveys the literature and practice in the area of corporate environmental reporting, an essential stage in any type of conceptual framework methodology. Chapter four combines the discussion of conceptual frameworks developed in this chapter with the literature in chapter three in order to develop a theoretical model for corporate environmental reporting. This stage, again, is common to the conceptual framework in clusters where an implicit framework is being made explicit, and where there is an intention to test the model empirically. Chapter five discusses the research design applied in the empirical testing stage of the conceptual framework methodology used in the thesis. Chapters six, seven and eight present the findings of this empirical testing. In chapter nine, the findings are consolidated. Chapter ten concludes the thesis by revisiting the theoretical model with the empirical findings, thereby producing an empirically tested conceptual framework model, entirely compatible with the conceptual frameworks discussed under the empirical cluster within this chapter. Finally, policy

recommendations are made. This, again, represents an important element of advanced conceptual frameworks within the empirical cluster discussed in this chapter.

## Chapter Three

### A Survey of Corporate Environmental Reporting in Theory and in Practice

*"The growing concern of stakeholders about green issues has forced many managers to produce environmental reports aimed at providing information on the environmental consequences of a firm's activities. Unfortunately, there are no definite rules about the form, structure and content of environmental reports".*

Azzone, Manzini and Gioliano (1996).

*A conceptual framework for environmental reporting is an organised frame of reference representing consensus views for reporting entities and interested parties, concerning the foundations and objectives of environmental reporting.*

Definition used in current survey.

#### 3.1 Introduction

As seen in chapter two, a survey of relevant literature is an essential element in the development of a conceptual framework in any discipline. This chapter surveys the literature and practice relating to corporate environmental reporting so as to provide a possible route by which an implicit conceptual framework for corporate environmental reporting may be transformed into an explicit conceptual framework. In section 3.2 a model of reality is introduced on the assumption that a conceptual framework for environmental reporting should incorporate a framework for everyday reality. This everyday reality is represented in this thesis in terms of testing empirically for the level of consensus between the three respondent groups: normative, interested party and company. Further, this reality model suggests that the companies involved in creating reality hold the "bigger stick" as they can impose their definition of reality on the rest of society, mainly as a result of the voluntary framework.<sup>1</sup>

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<sup>1</sup> There is little statutory or mandatory regulation for companies to disclose environmentally, at present. Consequently, most environmental information provided is purely voluntary.

Section 3.3 seeks to establish the current state of corporate environmental reporting in Britain, by using the following: a survey of current (best) practice in corporate environmental reporting; a survey of wish lists produced by normative parties, and; a survey of wish lists produced by interested parties. The breakdown of this survey of the current state of corporate environmental reporting into these three specific sections reflects the three distinct groups used in the thesis in both the theoretical model development and the empirical survey. This allows the theoretical and practical distinction between the company, normative and interested party groups to begin at this stage of the thesis.

Section 3.4 surveys a number of issues in corporate environmental reporting, including the motives for corporate environmental disclosure; the usefulness of corporate environmental disclosure; assessing and reporting environmental incidents; the time period and communication of corporate environmental reporting; the users of corporate environmental information; possible qualitative characteristics of corporate environmental disclosure; objectives of corporate environmental reporting, and; the inadequacies of corporate environmental reporting. An appreciation of, for example, the corporate motives for environmental reporting provides some theoretical support for the model developed in this thesis, as is discussed in section 3.4(i). One suggested reason for voluntary environmental corporate disclosure is corporate accountability to society.<sup>2</sup> For the purposes of this study, corporate accountability to society is a result of the "environmental ethos" as defined in chapter one. The theoretical reasons for corporate environmental disclosure are considered in developing an everyday reality. In summary, this survey of issues is essential to the theoretical development of a conceptual

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<sup>2</sup> Accountability as a motive for voluntary environmental reporting is discussed in section 3.4(i).

framework for corporate environmental reporting, as it provides an understanding of the issues which must be incorporated into such a framework and outlines the building blocks which should form the basis for a conceptual framework for corporate environmental reporting. A theoretical model is developed in the following chapter. Further, the discussion in this section is a vital element in the development of the questionnaire which will form the basis of the empirical work in this thesis.

In section 3.5, a rationale for developing an explicit conceptual framework for corporate environmental reporting is proposed which covers the need for, the potential for and the problems with developing/establishing an explicit conceptual framework for corporate environmental reporting. The chapter concludes in section 3.5.

Overall, this chapter establishes the basis for a formal interpretation of a reality of corporate environmental reporting *via* a conceptual framework approach. A conceptual framework approach to environmental reporting, similar to the framework established for financial reporting, allows comparisons to be made between them, thereby possibly advocating a comprehensive approach towards corporate reporting.

## **3.2 Reality**

This section introduces a model, which allows for the discussion of the differing realities of groups in society, at a general level. For the current research, the reality model allows formal discussion of the competing or non-competing realities of corporate environmental disclosure for the normative, interested party, and company groups (i.e. the sample respondent groups). The process by which different realities are formed into



a consensus, is an essential aspect of the process of developing a conceptual framework *per se* and therefore, for a conceptual framework for corporate environmental reporting.

The section is divided into two parts. The first introduces a model of reality, which is fundamental to the current research. The second applies this model, so as to explore, and explain, current financial reporting practice.

### 3.2.1 A Theory of Reality

*"It will be enough for our purposes to define 'reality' as a quality appertaining to phenomena that we recognise as having a being independent of our volition (we cannot 'wish them away')..."*

Berger and Luckmann (1991, page 13).

The following also has important implications for establishing a reality:

*"He who has the bigger stick has the better chance of imposing his definitions of reality".*

Berger and Luckmann (1991, page 127).

For corporate environmental reporting to be useful, and in order to discharge accountability, it must convey some notion of "reality". Gray (1992) takes an ecocentric view of accounting and the environment, by placing the environmental at the centre of his "reality". Tietenberg (1993) has the view that economic incentives may be used to maintain, and protect, our environment. These both represent "a" reality. Other views include anthropocentric, ecocentric and environmentalism (see Pepper, 1992, and; Dobson, 1990). The model of reality most appropriate to the current research, is that developed by Berger and Luckmann (1991). This model's pedigree is based on the work of Durkheim, Weber and Marx *inter alia*. Berger and Luckmann begin their investigation by considering the reality of everyday life. For the purposes of this study, everyday life

may be anthropocentric. However, this everyday reality is shared with environmentalist and ecocentric realities, amongst others. This would suggest that there is a hierarchy of reality since the more legitimate a reality seems, the more it is likely to represent everyday reality.

Central to Berger and Luckmann's hypothesis is their construction of reality. They base the social construction of reality on knowledge and institutions. Knowledge in society is based on relevance. As this knowledge is not evenly distributed throughout society, experts exist, for example, accountants and scientists, who possess the relevant knowledge. Berger and Luckmann define an institution as any action that is repeated frequently. Institutions are integrated into society and feed on each other. One may consider them symbiotic in nature. From institutions, a specialist language is born. Accounting has often been termed the "language of business", as the understanding and application of accounting represent an essential requirement for communicating within a business environment. Knowledge is held within institutions such as the scientific community, accounting professionals, environmental consultants, and the government. Therefore, reality in Berger and Luckmann's model, is based on institutions which have a relevant, possibly monopolistic knowledge. This infrastructure is essential in order to legitimately create a reality in society, as there is no reality unless it is legitimate. Legitimation explains and justifies the reality. The reality, according to Berger and Luckmann, is shaped by the person with the "larger stick". Corporate environmental reporting is an illustration of this, as the institutions and knowledge exist in their early stages, and corporations wield the most power. However, this power may be seen to arise from the current voluntary framework for reporting. It is not yet considered legitimate that all corporations should disclose environmental information, as there is

little mandatory environmental disclosure. Also, there are few sanctions against companies which do not disclose (see Perks, 1993). Therefore, as companies appear to hold the "bigger stick", their reality dominates. Presently, the voluntary nature of corporate environmental disclosure makes it spurious, non-comparable and sporadic (Harte and Owen, 1991).

Legitimation represents the values incorporated in reality. However, the question is, which values should be incorporated into corporate environmental reporting? Berger and Luckmann hypothesise that legitimation exists at four levels. The first level is incipient legitimation, which represents self-evident knowledge. This level of legitimation begins when language is used to express human experience (objectification) and is pre-theoretical. The second level is rudimentary legitimation. Legitimacy here is based on objective meanings, is highly pragmatic, and directly related to concrete actions. Theoretical propositions in a rudimentary form are found here. The third level is legitimation based on institutions and knowledge, and contains explicit theories, by which an institutional sector is legitimated, in terms of a differentiated body of knowledge. This is the area of experts, professionals and their respective institutions, universities, and professional bodies, and is beyond pragmatic application - it is pure theory. The final level is the symbolic universe, which incorporates the realities of the marginal situation. One suggestion may be that environmental issues are at least in level three, and most probably in level four. At level one, there is a belief that it is wrong to damage the environment. Degradation must have some legitimation. At the second level, some level of environmental degradation is understood. If a river is polluted, then fish will die. At level three, the development of a body of knowledge and institutions to disseminate that knowledge, can be seen. Specifically with regard to corporate

environmental disclosure, a body of knowledge is developing, as well as institutions to disseminate it, such as interdisciplinary research into environmental issues at universities, environmental departments at universities, the Environment Agency, and specialist media, such as Environmental News Data Services Report, and Business Strategy and the Environment. In other areas, this is apparent, in the concern arising from serious environmental incidents.<sup>3</sup> Level four, the symbolic universe, is evident from the reporting of marginal realities. A good example of this is the interest taken by Greenpeace, and their version of reality concerning Brent Spar, which represents the reality of a marginal group (see *The Economist*, June 1995). Thus, there is evidence supporting the legitimisation of environmental concerns, and the public accountability of corporations in this area.

Essential to the discussion of reality is the problematic existence of alternative realities, for example anthropocentric, environmental and ecocentric, or the realities of different groups, such as interested parties and companies. Berger and Luckmann's response to this is the understanding of the power inherent in institutions. This returns us to the introductory quote concerning the "bigger stick". There will always be discrepancies in people's perceptions of reality. What is convincing to one person may not be to another. The ultimate, imposed reality is expressed by government legislation, resulting in mandatory disclosure. However, it might be imposed but not expressed by government, owing to powerful interests being satisfied. The main concern arises when corporations have a monopoly position on their environmental disclosure reality, and this is inconsistent with the everyday reality of large sections of society. This reality dichotomy

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<sup>3</sup> The development of the Ceres Principles (CERES, 1992) after the Exxon Valdez disaster, is a typical example of this, especially with the proliferation of voluntary corporate environmental reporting frameworks from this incident.

is evident from the environmental pressure groups, research and public concern with environmental issues, as a result of commercial activities.

Reality is complex. Corporate environmental reporting reality is influenced by the corporation's own perception of reality, other corporations' perception of reality, and to some extent interested party and opinion formers' perception of reality. As discussed above, corporations may, at present, have the biggest stick.<sup>4</sup> However, it is possible that corporate environmental disclosure does not necessarily represent corporate reality, and that corporations may affiliate themselves to one reality, yet disclose according to another. For example, voluntary corporate environmental disclosure tends to be positive for many corporations, yet to what extent does the environmental information that corporations disclose, represent the reality of commercial exploitation of the environment to interested parties? Also, to what extent does the environmental information, that companies disclose, represent what should be disclosed in normative terms? Finally, to what extent does the normative reality of what should be disclosed coincide with the interested parties' reality? The survey will consider these issues.

### **3.2.2 Reality in an Accounting Context**

The application of Berger and Luckmann's treatise in accounting can be seen in Hines (1988).<sup>5</sup> The institutionalisation of accounting in society has meant that, not only do accountants communicate a reality, but also they, in turn, construct reality. Hines

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<sup>4</sup> Again, it is worth noting that the existence of this bigger stick may be as a result of the lack of mandatory disclosure, and the current voluntary framework for corporate environmental reporting. Regulation would perhaps be one way of pruning the companies' "bigger stick".

<sup>5</sup> For support of Hines' position, see Burchell, Club, Hopwood, Hughes and Nahapiet (1980), Peasnell (1982), and Tinker *et al.* (1991).

describes the multifarious realities that accountants can legitimately construct, in an eloquent set of acts. Accounting and its realities are now a legitimate, everyday reality. There are important implications here, as Hines describes a financial accounting reality. She describes how corporations can pollute, yet there is little, or no, accountability for their actions. The accountants' everyday reality does not, as yet, incorporate the environment. People act upon the picture created by accountants. This picture is supported by large sectors of society which have faith in the image: thus reality is created. Everyone creates reality, but the position of accountants as "official communicators of reality" (Hines, 1988, p. 253), means that they have more influence over everyday reality. It has been suggested, albeit indirectly (see Gray, 1990) that they might use this power to shift their reality in favour of the environment.

Hines' work in the area of accounting explains that there are many possible images of reality. Her ideas are used empirically in this research, as each of the three sample groups is questioned about their image of reality. These images are then combined to establish the level of consensus. Hines (1991) extends her investigation into accounting reality, as a social construction, by considering the conceptual framework of the Financial Accounting Standards Board in the United States. She concludes that (Hines, 1991, page 327) :

"...conceptual frameworks provide social legitimacy to the accounting profession".

The knowledge and experience that accountants have acquired in understanding business, gives them legitimacy, which leads to professional power and autonomy. Hines' analysis of the accountant's social construction of reality is plausible. If this is a reality, then one way of legitimising corporate environmental disclosure is for measurement to take place by a professional group, such as accountants and/or environmental scientists. This

process can be further legitimated by legislation, as well as a conceptual framework for corporate environmental reporting. For Hines, any conceptual framework must be dynamic in nature, as corporate accountability will change over time. Therefore not only are there many realities, but these realities are time variant. Thus there can only be, at best, "a" conceptual framework in environmental reporting, that changes over time.

Accounting is a numerical reality. The everyday reality is historic cost accounting, an alternative reality being economic income. Even within this alternate reality, there are several further legitimate alternatives. Davis, Menon and Morgan (1982) argues along these lines concerning the accounting reality continuum. They make the point that (page 308) :

"...if one explores how these images are created and developed one sees that the image usually offers no more than one particular limited mode of insight".

Their view emphasises fundamental problems in accounting. This study will not only consider corporate environmental reporting, in terms of the present financial framework, but will ask the sample groups about their views of other measurement types, such as quantitative and qualitative.

Gray *et al.* (1987a) discuss the problems of visualising reality, given the many definitions of reality. It is important to accept that many realities exist. In an attempt to overcome this problem, the questionnaire in the current study attempts to gain a momentary image of the sample population's reality. Gray *et al.* (1987a) and Mathews (1993) discuss a reality, whereby companies are pressured to report environmentally. The disclosure component of the theoretical model developed in chapter four, uses a framework in which companies are pressured to disclosed environmental information to

the public. For potential problems with Berger and Luckmann's model of reality, see Smith and Turner (1986).<sup>6</sup>

### **3.2.3 Summary**

The above discussion has introduced a model of reality. The importance of this model is that it highlights what will from here be called the "big stick" argument, which is a vital part of understanding how a corporate environmental reporting voluntary framework functions, with the company holding the "big stick", thereby dictating the reality.<sup>7</sup>

## **3.3 The Current State of Corporate Environmental Reporting Practice**

An ideal basis for developing a rationale for establishing a conceptual framework in corporate environmental reporting is a discussion of the reality of corporate environmental reporting as created by company management. In order to achieve this, section 3.3.1 takes a general overview of corporate environmental reporting and then presents a survey on some of the best companies that report environmentally. Following Berger and Luckmann (1991) from part 3.2, in that a reality is created, it is necessary to consider how others may wish, if at all, to alter that reality. Therefore, sections 3.3.2

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<sup>6</sup> The main problem for Smith and Turner (1986) with Berger and Luckmann's model lies in principal and agent. Smith and Turner are not totally convinced that a company, rather than an individual, can be an agent. There is an analogy here with the questionnaire, where the opinions of management are solicited, and are taken to represent that of the company. This is an obvious problem, which cannot easily be redressed.

<sup>7</sup> The dominance of the company's reality must be considered, as previously mentioned, in relation to the current voluntary framework for corporate environmental reporting.



and 3.3.3 consider the realities that both normative<sup>8</sup> and interested parties would like to see.<sup>9</sup> Part 3.3 then summarises the current state of corporate environmental reporting.

### **3.3.1 Survey of Current Practice in Corporate Environmental Reporting**

This section begins with an overall view of corporate environmental reporting by considering a number of surveys in the area. This sets the scene of a few relatively large companies reporting favourably on their environmental performance within a voluntary framework. The discussion then proceeds to the few mandatory requirements, for corporate environmental reporting that company management are required to comply with. Lastly the voluntary environmental reporting practices of company management are also considered in a survey of "best" corporate environmental reporting practice.

Harte and Owen (1992), provide a brief review of contemporary corporate reporting practice, concluding that (page 174):

"The overall impression conveyed ... is again one of a very limited response in general on the part of UK companies towards the evolving green agenda, at least in terms of making salient information publicly available".

Their survey also considered best environmental reporting practice at the time, with reference to the annual reports of a selection of companies. Roberts (1992a) also examined corporate annual reports, but in a European context, finding that (page 165):

"...the level of disclosure is by no means always adequate. Indeed there are still instances of corporations disclosing no information in this area".

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<sup>8</sup> This distinction is made on the assumption that parties such as the United Nations, World Industry Council for the Environment, academics, etc. are opinion-formers but are not involved directly with the use or production of corporate environmental reports. The distinction here is consistent with that applied in the questionnaire sampling procedure.

<sup>9</sup> This, of course, assumes that companies hold the "bigger stick".

Again, the survey considered best environmental reporting practice for a selection of companies. Also, Adams, Hill and Roberts (1995) considered the annual reports of 150 of the largest European companies and found that 23% did not disclose any environmental information. The survey included 25 British companies, of which 80% reported environmentally to some extent. Gray, Kouhy and Lavers (1995) conducted a survey of largely FT100 UK companies which involved looking at their voluntary environmental disclosure between 1979 and 1987. They concluded that for this group there had been a substantial increase in this type of disclosure over the period. Lastly, Gray *et al.* (1996a) discuss three broad categories of corporate environmental practice in Europe, suggesting that UK companies are in the descriptive and performance reporting category. The main characteristic is that in terms of best practice, these companies should produce a separate environmental report. They conclude, however that (page 118) :

"...the current level of accountability is clearly inadequate".

In summary, it appears from these surveys that corporate environmental reporting in the UK has steadily increased over the last few years for very large companies, who are particularly vulnerable to environmental issues. However, the vast majority of companies whether large or small, do not disclose any environmental information such that the overall level of environmental disclosure appears inadequate (see section 3.4(xii)).

Current practice in corporate environmental reporting can be divided into two broad areas: mandatory requirements, as set out in legislation, and; voluntary initiatives undertaken by companies. The mandatory requirements centre around a wide range of registers on environmental discharges by companies. These were introduced in the Environment Protection Act 1990, which allowed increased access to corporate

environmental information. Water pollution is an example of mandatory disclosure, where a system of public registers was introduced, which contain information on the consents granted to companies, allowing them to discharge effluents into the water. The registers also contain information on the frequency with which the limits are not complied with. These public registers are available for inspection free of charge. Registers also exist for waste disposal, contaminated land, and integrated pollution control (see Ball and Bell, 1995, for further details). There may also be mandatory disclosure in a company's annual report on environmental issues, such as the costs and/or contingent liabilities associated with cleaning contaminated land (see ASB, 1995b).

Companies also disclose environmental information on a voluntary basis. This may be information which is already available from the public registers, and which has been "recycled". Conversely, it may be "new" disclosure. There are many voluntary codes available upon which companies may base their disclosure, such as the Ceres Principles (CERES, 1992) and the United Nations framework (UNEP, 1994). However, to all intents and purposes, companies disclose what environmental information they wish when they wish, with little or no recourse. The result is that the disclosure is usually positive and public relations-oriented (see Benston, 1982a, and 1982b; Rockness, 1985; Owen, 1992, and; Deegan and Rankin, 1996). As stated by the United Nations (UNEP, 1996b, page 7):

"What becomes clear is that companies are still treating the CER (corporate environmental report) primarily as a public relations vehicle - for reassurance and "feel-good" image building..."

As discussed above, over recent years, there has been a marked increase in corporate environmental reporting (see Gray *et al.*, 1995). This is not, however, an indication of quality and most importantly only a small number of the largest companies still disclose

environmental information. The disclosure is on an individual company basis and although a company's progress can often be gauged between years, it is not possible to compare on a like-for-like basis between companies, even for companies within the same industry.

The voluntary environmental reporting practices of company management can represent an implicit conceptual framework, if they share some basic similarities. Following the surveys cited above, the most appropriate means of discovering practice in corporate environmental reporting is to survey the annual reports and environmental reports of a selection of companies.<sup>10</sup> The companies for the current survey were selected as they exemplify the "best" environmental reporting presently available, as suggested by the Environmental Accounting Auditor Reporter (EAAR).<sup>11</sup> It is not worthwhile listing the numerous companies that do not disclose any environmental information, or very little. The sample for the survey represents "disclosure reality" for the respective companies. There is no doubt that company management presently hold the "bigger stick" in voluntary corporate environmental disclosure, thereby setting the actual reality of the reporting agenda. The survey examines the reports of the companies selected for evidence of reporting on a series of issues. These issues relate directly to the questions posed to the respondents in the questionnaire, in attempting to ascertain the extent to which such issues and items are reported.

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<sup>10</sup> These include the annual reports and environmental reports of the following companies: Anglia Water, British Airways, British Gas, British Petroleum, British Telecom, Body Shop, Dow Chemicals, ICI, London Electricity, NatWest, and Thorn EMI.

<sup>11</sup> Over the 18 month period between January 1996 - June 1997.

Many of the companies in the corporate environmental reporting survey disclose their legal environmental compliance. For example, British Airways (1995, supplement)<sup>12</sup> provides quantitative data on noise infringements at Heathrow airport. These amounted to 74 in 1993/94 down to 61 in 1994/95. Legal compliance is also reported quantitatively by ICI (1995). The company was prosecuted on four occasions in 1995, compared to 13 occasions in 1994. The financial cost amounted to £10,000 in the UK and \$512,500 in the US. Legal environmental compliance can also be disclosed on a qualitative basis, for example ICI (1995, page 7) :

"We will continue to work towards our goal of total compliance".

Disclosure of legal environmental compliance can be particularly useful to interested parties as it allows comparison over years for a company and between companies. Legal compliance is an indication of how much company management respects society's values as reflected in legislation.

Central to corporate environmental reporting is not only disclosure of environmental performance, but also the description of the environmental initiatives that have been developed to improve performance. For example NatWest (1996), in its efforts to reduce paper waste, now sends out multiple statements to customers with more than one account. This has saved £200,000 in envelopes and £3 million in postage. Further, British Airways (1995, supplement) are exemplary in disclosing their current recycling projects - in particular, the collection *via* internal post of used laser print cartridges for recycling. In 1992, 414 were collected, and 155 in 1993. By 1994, 1,297 were collected, which resulted in revenue for British Airways of £1,860. This is a typical example of

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<sup>12</sup> The term "company (year)" refers to the company environmental report or the health, safety and environment report. To distinguish the company's annual report, this will be written in full each time.

both financial and quantitative disclosure used together. Therefore, joint disclosure may not only be useful to interested parties, but the initiatives may also be useful to other companies. In this area at least, disclosure seems to be open - even if it is to promote the company.

A recurrent theme in the corporate environmental reports surveyed is disclosure of the company's environmental policy statement. A typical example is that from British Telecom (1996, front cover insert):

"BT is committed to minimising the impact of its operations on the environment by means of a programme of continuous improvement".

Disclosure of environmental policy statements is qualitative. The environmental policy statement can be seen as the seed from which a company's disclosure develops, and as such may represent useful information for interested parties.

All the companies in the survey reported, where applicable, on their raw material use, energy and water consumption. For example, ICI (1995) reveals that its main inputs are energy, salt and oil, and other raw materials. They provide no accompanying data except for a final production figure of 26 million tons. NatWest (1996) discloses information on energy consumption in terms of its cost to the bank, the actual amount of kilowatt hours consumed, and the setting of qualitative reductions in energy by cost and consumption. British Telecom (1996) discloses information on the quantity of energy and water consumed, but no disclosure is given on any other basis. Further, London Electricity (1996) discusses internal energy consumption on a financial and quantitative basis. Resource information can be particularly useful in consideration of sustainable development and company efficiency.

The survey gave some insight into current practice in relation to reporting corporate environmental risk. The work of the banking sector in this area of corporate environmental reporting is influential, particularly that of NatWest, which works with the Advisory Committee on Business and the Environment and the World Business Council for Sustainable Development. There is a sense that the bank is trying to set the environmental reporting agenda to coincide with its own interests. For example (NatWest, 1996, page 9) :

"One of the most satisfactory findings from our 1995 Audit is confirmation that environmental risk issues have been integrated into the initial and on-going credit appraisal process".

They then go on to criticise the financial sector generally, i.e. investors, fund managers and analysts, for not following their lead. NatWest's main objective through the Advisory Committee on Business and the Environment is the integration of environmental issues into the financial reporting requirements of business (see ACBE, 1996b). This approach may suggest that large, dominant companies are putting their own, or industry, agenda forward. This is therefore not a "consensus" approach but a "big stick" approach, whereby only the needs of a select, yet powerful, stakeholder group are addressed and in this case mainly in financial terms.

In relation to the corporate environmental reporting of risk, from an industry perspective British Gas in its 1995 annual report disclosed an exceptional charge in its profit and loss account of £200 million for environmental costs (see notes 3 and 5) resulting from land contamination. Overall, its total provision for environmental costs in the balance sheet amount to £421 million (see note 19). The British Gas environmental review (British Gas, 1995) gives a qualitative assessment of what the company is doing to rectify land contamination. Examples are provided of the remediation work undertaken,

but no quantification is given as to the number of sites or the physical area that has been contaminated. Other examples of this type of disclosure include the environmental contingent liabilities of Dow Chemicals (see Dow Chemical Company, 1995, note Q) for \$275 million and the environmental provisions of British Petroleum (see British Petroleum, 1995, note 24) for £722 million.

A further example of reporting environmental risk is represented in the following statement by British Petroleum in the financial review section of its annual report (British Petroleum, 1995, page 24) :

"The extent and cost of remediation programmes are difficult to estimate. They depend on the scale of any possible contamination, the timing and extent of corrected actions, and BP's share of the liability. Although their cost could be significant, and may be material to the result of operations in the period in which they are recognised, we do not expect them to be material in relation to BP's financial position or liquidity. We believe our provisions are sufficient for known requirements".

Given that risk is difficult to quantify, qualitative statements such as that of British Petroleum can be of some use to interested parties.

The survey provided several examples of disclosure that is broader in terms of bases. An example of this is the reporting of the generation and disposal of wastes, employing financial, quantitative and qualitative information by ICI Chemical and Polymers' with its annual discharge of 0.9 million tonnes of common salt into the Mersey. ICI have studied ways of reducing their brine wastes. They state that (ICI, 1995, page 5) :

"We estimate that any answer would cost over £30 million and would only provide small environmental benefits".

There were also several cases where quantifiable disclosure might be expected, but financial and/or qualitative disclosure was provided instead. For example, British Gas (annual report, 1995) states that the bulk of its £200 million environmental provisions



for land contamination is a result of the introduction of the landfill tax. Also, British Gas' (1995) operating subsidiary British Gas Properties owns several sites which have received adverse attention from pressure groups. The disclosure in the environmental report is totally qualitative. The expectation is that the disclosure would be quantitative, as it is useful to know the number of sites and the area that are affected. However, this is not always the case.

The survey also indicated that disclosure of management-type information is common. Using compliance with legislation as an example, British Gas (1995) for some of its operating subsidiaries, has set a target of "no legal notices or prosecutions" for 1996, whereas for other subsidiaries, there is no such target. British Petroleum (1995) discloses details of its "compliance" in terms of the penalties it has paid for legal infringements. The disclosure is by business and is in both sterling and in dollars. British Petroleum (1995) also discloses that it paid 12 environmentally related penalties in 1995, and that (page 3) :

"BP paid fewer penalties for legal infringements in 1995 than in 1994".

The actual number of infringements for 1994 is not given.

The survey also revealed that all the companies set their own measurable environmental targets and objectives for future periods. This was seen in terms of benchmarking,<sup>13</sup> and was also prominent in the survey, with most of the companies using their own previous performance as a benchmark. For example, Dow Chemicals (1996) has developed a series of indexes, and discloses environmental benchmark information in relation to

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<sup>13</sup> Benchmarking should allow comparability over time for a company and with other companies in the same industry.

increases and decreases to the indexes' base year. Interestingly, London Electricity (1996) has created a set of ten sustainability indicators by which it benchmarks itself. Anglian Water (1996) makes a valiant attempt to benchmark its own performance against industry norms. Given that benchmarking is in its infancy, the company is only able to provide benchmark indicators for 28% of the data disclosed. The company's management also discloses information on the prosecutions they had in the previous year. The total fines plus costs of £17,585 are benchmarked against the industry norm of £17,295. Also the industry mean average for 1995 of 2.6 prosecutions, is compared to the company's 4 prosecutions in 1995/96. Furthermore, Anglian Water also discloses benchmarking information in a distinctly qualitative form, in relation to problems that resulted in the prosecutions.

The survey also revealed that several companies disclose environmental financial information. For example, Anglian Water (1996) estimates that the landfill tax will cost the company £6 million per year. Also, ICI (1995) estimate that it spent £200 million on the environment for 1995. The impact of environmental legislation can also be felt on contingent liabilities. ICI, for example, in its 1995 annual report discloses that it has £96 million of contingent liabilities.

London Electricity (1996) disclosed "Information for the City". Under the general title of environmental expenditure, the following are disclosed: capital environmental expenditure; environmental revenue, and; environmental contingencies. Given the uncertainty surrounding disclosure of this type, the company makes the following statement (London Electricity, 1996, page 4) :

"... we do not yet have the systems in place which allow us to accurately record all environmental expenditure or the proportion of expenditure which

might secure environmental benefit. This issue is particularly significant since major capital programmes often bring environmental improvements which are not themselves the prime motive for the investment decision".

Such statements are very important as some companies, for example British Airways (1995) have been known to disclose environmental information which is more for public relation purposes than for accountability or economic decision usefulness.<sup>14</sup>

In relation to cost savings from energy conservation, the survey revealed that this was also frequently disclosed by, for example, NatWest (1996) which states that over the period 1991-1995 the company has made cumulative net savings from energy consumption of £41.8 million. The company also made cost savings from paper recycling. British Airways (1995, supplementary data in the note to figure 13d: Recycling-revenue and quantitative statistics) state that :

"In 1994-95 miscellaneous items sold for re-use: revenue £3,472.  
Total recycling revenue for 1994-95: £50,669, which in the future will be reinvested into environmental initiatives with the exception of precious metals where income will be returned to the Engineering Department".

Of particular interest, is that British Petroleum, Dow Chemicals, and ICI, in their 1995 annual reports, all have accounting policies for environmental liabilities.<sup>15</sup> British Gas, in its 1995 annual report, has an accounting policy on abandonment costs. An example of such an accounting policy is that found in British Petroleum's 1995 annual report (page 27) :

"Environmental expenditures that relate to current or future revenues are expensed or capitalised as appropriate. Expenditures that relate to an existing

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<sup>14</sup> For example, British Airways stated that the company is committed to spending more than £4,000 million in relation to the acquisition of aircraft. The problem is that British Airways classify this as an environmental cost, which is debatable.

<sup>15</sup> The importance is not so much in the amount of the liability, but rather in the fact that a formal accounting policy has been adopted by these companies.

condition caused by past operations and that do not contribute to current or future earnings, are expensed.

Liabilities for environmental costs are recognised when environmental assessments or clean-ups are probable and the associated costs can be reasonably estimated. Generally, the timing of these provisions coincides with the commitment to a formal plan of action or, if earlier, on divestment or on closure of inactive sites".

This would seem to reflect the importance of environmental liabilities for certain industries, and that some are more sensitive/prone to such liabilities. Interestingly, Body Shop, in its 1995 annual report, does not have an accounting policy for environmental liabilities, suggesting that this is not a financial issue for the company. This would be as expected, given the company's pro-active stance on environmental issues. However, given the present framework, the reality may be that Body Shop management do not perceive that they have any environmental liabilities to report.

An interesting example of quantitative disclosure which has major financial implications is British Petroleum (1995) and its discharges to water. The company has developed a technology which exceeds the legal standard for discharging into the North Sea from 40 parts per million to 17 parts per million.

The survey also revealed that corporate environmental reports are used to disclose information on environmental incidents. London Electricity (1996), for example, reported five environmental incidents, two of which resulted in consultation with the National Rivers Authority. These are termed "formal complaints". The company also received 2,000 "complaints or enquiries" concerning street works. Although not specifically stated, the assessment and reporting of both types of complaints (not including the National Rivers Authority) was by the company employees. Dow Chemicals (1996, page 34) states :

"Dow has developed a global process to evaluate the severity of these incidents. In 1994, Dow Europe began tracking incidents according to six factors, including human and environmental impact, size of release, resulting property damage, and community impact. Category One incidents - the most serious - accounted for 10 percent of the incidents in Europe. Forty percent of incidents were classified as Category Two and the remaining 50 percent fell in the category of least severity, Category Three".

British Gas (1995) reports on the environmental impact of site contamination in Honnington, Devon. At Honnington, a remediation strategy was agreed with both the Local Authority and National Rivers Authority. Other examples are given of cooperation between British Gas and these authorities. However, at Redruth, Cornwall, British Gas undertook all the impact assessment itself. The approach taken by Dow Chemicals (1996, page 34) is that:

"In the event of an incident, our first priority is to correct the situation to ensure public safety and minimize environmental impact. We also place a high priority on determining the cause of the incident".

ICI (1995, page 18) stated, for example that :

"We will continue to report publicly those incidents which result in fines and prosecutions together with those that we will notify to the regulatory authorities. We will report all significant spills which have - or could have - caused public concern".

Very much in the same spirit Dow Chemicals (1996, page 34) states that :

"Every case in which a certain quantity of material leaks out of its primary containment is reported as an *environmental release or spill*, even if the leaked material is fully contained and has no impact on the environment.

All such events are promptly reported to the relevant authorities as required".

Popular communications vehicles, for corporate environmental disclosure, include the Operating and Financial Review section in the annual report, and/or a separate annual environmental report. This begs comparison with financial reporting, in that firstly, mandatory disclosure on environmental issues can be found in the financial statements, with voluntary disclosure in the Operating and Financial Review. Secondly, verification of environmental disclosure has involved accounting auditors, as well as, for example,

environmental consultants. Thirdly, there is some overlap of the users of both environmental and financial disclosure from companies. Lastly, corporate environmental disclosure has been categorised into three broad areas, namely descriptive and performance reports, quantitative environmental accounts, and financial environmental reports (see Gray *et al*, 1996a). This commonality between financial and environmental disclosure has created a reporting relationship involving accountants. This is both in terms of developing systems to enable reporting and verification and as with financial auditing the same firm of accountants may do both. The survey indicated a conformity towards where the environmental information is presented and how often, with all the companies disclosing environmental information in their annual reports and in a separate annual environmental report. This result is indicative of the biased sample chosen representing "best practice". A more representative view is that of NatWest (1996, page 9) :

"Unfortunately the subject of environmental reporting has not been readily taken up by the majority of industry, despite the issuance of numerous sectorial codes and guides. A little over 200 out of approximately 36,000 multinational companies, have publicly reported their environmental performance to their stakeholders".

The survey indicated that corporate environmental reports are also used as a vehicle for discussing who their audience may be, for example, British Gas (1995) and British Telecom (1996) discuss stakeholders generally. Dow Chemicals (1996) discusses employees and its external audience. Thorn EMI (1995, page 4) in a section entitled "Target audience" state:

"As with our two previous environmental reports, this year's edition is principally intended to support the environmental aims of our businesses and is therefore primarily addressed to our own staff. However, we continue to encourage interest in our environmental performance from other stakeholders, including customers, suppliers, shareholders and other investors, specialist interest groups and local communities, and hope that this Report will also serve this purpose".

A prominent feature of several of the environmental reports is how the companies' management consults with stakeholders about their environmental disclosure. For example, British Petroleum (1995, section 2.0) states :

"We consult widely outside the company - environmental campaigners and journalists..."

Also, British Petroleum (1995, section 2.0) states:

"We consult our workforce throughout the company - our new HSE Commitment resulted from listening to employees' views; our chemicals business conducts an employee attitude survey including questions on key HSE issues".

Dow Chemicals (1996) also surveys the attitudes of its employees and its external audience towards its environmental reports.

The cost of environmental disclosure can be high, indeed Thorn EMI in its 1995 annual report suggests a figure of £182,000 for environmental communications. The company also decomposes these environmental communication costs for each of its divisions in its annual environmental report. An interesting and notable point is that all the environmental reports used in the survey were free.<sup>16</sup> Several of the companies also mentioned in their annual reports that a free annual environmental report was available.

The survey indicated that there are essentially two ways in which companies report their actual environmental impact. They either report on the specific pollutant concentrates that they produce, such as carbon monoxide, arsenic, etc., or they report on the impact they have on air, land, water and noise levels. For example, a very important issue for British Airways (1995) is noise and the company discloses five pages of noise related

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<sup>16</sup> Body Shop had a charge of £10 for their report. However, they waived payment for research purposes.

environmental information. Noise is also disclosed by London Electricity (1996). British Gas (1995) discloses information on contaminated land. Thorn EMI (1995) discloses information on air pollution. British Petroleum (1995), British Telecom (1996), and ICI (1995) all disclose information in the context of air, land and water. Dow Chemicals (1996) discloses information on air, land, water, and noise levels on a site by site basis, and provide consolidated figures for the whole company. In relation to water, British Telecom (1996) discloses information on consumed and contaminated water.

Independently verified environmental disclosure is a particularly important area, as this gives credibility to the information disclosed. Verification seemed to be on a continuum from, for example, British Telecom (1996, page 5) :

"The purpose of verification is to underpin the credibility of the environmental report",

to ICI (1995) who do not verify their report but rely on BS7750, EMAS, and the development of ISO14000. Dow Chemicals (1996) also rely on the credibility of its report on EMAS third party validation on a site by site basis. Both ICI and Dow detail sites which have achieved one or more of these certifications but the disclosure does not contain all their sites. Therefore, it is not clear what disclosure has or has not been audited. Other companies, for example Anglian Water (1996), British Airways (1995), British Petroleum (1995), British Telecom (1996), Body Shop (1995), NatWest (1996) and Thorn EMI (1995) all indicate what parts of their reports have been validated and reasons why others have not. This is a far more transparent approach than that taken by ICI and Dow Chemicals. British Gas (1995) was the only company in the survey not to discuss verification of the environmental report or certification. British Gas has its own corporate level audit department which carried out a review of the environmental management systems of all the British Gas subsidiary companies. Verification of British



Gas' disclosure was by an independent management team, for the other companies it was either performed by one of the large accountancy partnerships or by an environmental consultancy.

It is interesting that in the environmental corporate reports used in the survey, verification was only qualitative and only 63% of the companies had some form of verification. For example, NatWest's environmental report (1996) consists of 44 pages and only 14% of the disclosure in the report is covered by the audit. A further 39% has some credibility. However, 47% of the report contains qualitative disclosure of dubious usefulness (see EAAR, February, 1997).

The survey also produced evidence relating to the access for interested parties to corporate environmental disclosure; it took three months to obtain the annual reports and environmental reports for the ten companies used in the survey. Letters were sent to the companies requesting reports, the addresses were all correct and there was an appropriate person to send the letter to in each organisation. Most of the companies surveyed mentioned in their annual report that their company had produced an environmental report (see British Telecom's 1996 annual report, and British Gas and British Petroleum's annual report for 1995). Some, but not all, the companies gave details of where to obtain their environmental report (for example, British Airways in its 1995 annual report informs the reader that there is an environmental report but not where or how to obtain it). One company made no mention of its environmental report in its annual report (see ICI, 1995).

The survey also looked for evidence relating to suggested motives for corporate environmental disclosure. British Telecom (1996, page 4), for example, states that :

"BT is keen to increase the public awareness of its environmental performance".

The company does not, however, tell us why. Social responsibility is a possible motive, and NatWest (1996, page 9) states that :

"NatWest strongly believes in the importance of integrating environmental issues into the core activities of business, and that the integration and public reporting on progress are necessary first steps in achieving sustainable development".

Another possible motive underlying corporate environmental reporting concerns improving a company's corporate image. For example, Colin Southgate, the chairman of Thorn EMI (1995, page 2) states:

"I continue to believe that being environmentally efficient makes sound business sense".

As a final note to this section, the survey considered companies with best practice. However, the majority of companies do not disclose any corporate environmental information. Again, the survey was used to isolate possible explanations for this. However, the survey only produced one comment about the lack of corporate environmental disclosure from NatWest (1995, page 9) :

"Reasons for this apparent reluctance are no doubt complex, but probably include cost, fear of potential prosecution for admitted short-comings and lack of the required management information".

Adams *et al.* (1995) found that the following types of environmental information were disclosed: policy statements or reviews on demands; environmental impacts; targets/standards; product information; capital investments; research and development activities; process information; expenditures incurred; overview of activities; management responsibilities; environmental audits, and; remediation activities. These findings are consistent with this survey of current corporate environmental reporting practice.

A current reality for corporate environmental reporting, is that company management discloses environmental information when they wish, and as they wish. Therefore, the suggestion is that, in a voluntary corporate environmental reporting framework, company management, in effect, has the "bigger stick", thereby allowing management to create a corporate environmental reporting reality. The corporate environmental disclosure in the survey does share a number of similarities. The disclosure is generally unaudited, the disclosure is made on a financial, quantitative and qualitative basis with a bias towards qualitative. The disclosure is reported on a yearly basis. The reports are used to inform stakeholders about environmental incidents. There is a tendency for there to be discussion with stakeholders about content. The reports are provided free of charge. Just these examples suggest an implicit framework. The disclosure overall tends to be favourable to the company, hence supporting the "big stick" argument. In contrast the next section concentrates on a more normative approach to corporate environmental reporting, from an expert's rather than a preparer's perspective. Having surveyed best practice in corporate environmental reporting, the survey now turns to what environmental disclosure normative and interested party groups consider companies should produce.

### **3.3.2 Wish Lists: Normative Parties**

An area of literature exists<sup>17</sup> which promulgates a series of codes of practice, frameworks, guidelines, charters, etc. for corporate environmental reporting, which may be referred to collectively as "wish lists", as they generally consider what certain groups

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<sup>17</sup> For example, that from the United Nations, the Advisory Committee on Business and the Environment, the Coalition for Environmentally Responsible Economies, etc.

want, or wish for. The parties (this includes both organisations and academics) behind this literature do not actually use corporate environmental disclosure, they do however make suggestions as to what should be reported. This literature is therefore normative in nature. This section surveys some of these wish lists, with the emphasis on what the normative parties suggest should be reported by company management. In this discussion, an attempt is made to analyse the wish lists in relation to the level of environmental disclosure which they recommend. The most "ambitious", or "mature" recommendations seem to arise from user-oriented perspectives whereas more "primitive" disclosure guidelines appear to arise from an industry, or producer (of disclosure) perspective.

The principal independent study of company environmental reporting practice, and international industry codes of conduct, is "Company Environmental Reporting: A Measure of the Progress of Business and Industry towards Sustainable Development" (UNEP, 1994). The methodology involved examining 100 pioneering companies in environmental reporting and five international industry codes of conduct with the aim of identifying building blocks which would allow companies to construct their environmental reports according to "their own priorities". The study also considered, to some extent, different stakeholder needs, and how these might be incorporated into the environmental reports. This extensive discourse identified 50 "reporting ingredients" (see appendix B, table A). These were then categorised into five broad groupings. Twenty of these reporting ingredients have been classified as "core elements". The agenda for the United Nations study was sustainable development.<sup>18</sup>

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<sup>18</sup> The view adopted for this thesis, was that consideration of sustainable development would narrow the debate. However, it is sufficiently important to be included as a few companies are attempting to incorporate sustainable development in their environmental reporting.

The five broad groupings of "reporting ingredients" suggested by the United Nations, provide some evidence for three types of disclosure, financial, quantitative and qualitative. The grouping, "management policies and systems", considers disclosure mainly in terms of qualitative disclosure, with quantitative, where appropriate. The grouping, "input/output inventory of environmental impacts of production, processes, and products" advises quantitative disclosure, and if this is not appropriate or available, qualitative. The grouping "financial implication of environmental actions" concentrates on financial disclosure but considers that quantitative, and qualitative, disclosure can be of relevance. An interesting insight revealed by the United Nations study, is that (UNEP, 1994, page 29):

"What is immediately striking is the lack of attention paid in the current generation of industry codes to the financial implications of environmental management".

The next stage in the United Nations Environmental Programme was the publication of "Engaging stakeholders: 1. The benchmark survey" (UNEP, 1996a). This continues the previous work, revising the 50 reporting ingredients (see appendix B, table 2). The main changes include the discontinuation of core elements, the discontinuation of some reporting ingredients, and reclassification of some ingredients. The five grouping sections stay the same. Also, a rating system has been introduced for the ingredients. The main objective of the United Nations studies is to develop a reporting framework for sustainable development. Although sustainable development is not central to this research, it cannot be ignored as there are many common characteristics between environmental reporting *per se*, and an agenda of sustainable development. These can be seen in appendix B, table 3, where the International Institute for Sustainable Development's "Framework for Corporate Environmental Reporting on Sustainable

Development" (IISD, 1991) has been reproduced. In summary, these wish lists appear to be promoting environmental disclosure which is ambitious and mature in nature.

A series of "wish lists" has also arisen from industry, representing a normative perspective. For example, the World Industry Council for the Environment's publication, "Environmental Reporting: A Manager's Guide" (WICE, 1994) suggests four areas in which companies should consider disclosure. This organisation is a global coalition of enterprises, initiated in 1993, by the International Chamber of Commerce. Membership amounts to 90 enterprises from a diversity of commercial sectors representing 21 countries. The guidelines have been reproduced in appendix B, table 4. The possible contents of an environmental report suggested by the World Industry Council for the Environment, are intended to enable a company to produce a report which relates to the company's business interests, the rationale for the report, and the main audiences. Therefore, the company can pick and choose which of the possible contents to use. The possible contents form the basis of a consensus of opinion which seems to have developed with respect to environmental corporate disclosure. This is, however, an industry consensus and does not necessarily incorporate the views of other stakeholders.

The World Industry Council for the Environment's guidelines provide evidence in support of the disclosure of environmental information on more than one basis. The suggested qualitative disclosure includes, for example, under the heading "environmental targets and objectives" (WICE, 1994, page 11) :

"Published targets or objectives are frequently the driving force behind continuous improvement in environmental performance. When establishing these objectives, be aware of the potential costs and possible legal implications".

The suggested quantitative disclosure includes, for example, under the heading "environmental indicators and targets" (WICE, page 12) :

"A report may contain data on emissions, effluents and discharges to air, water and soil, and provide information on specific local community concerns such as noise and smells".

Financial disclosure is a sub-section of quantitative disclosure (WICE, page 13) :

"Some enterprises, either because of the type of activity or set of products and services, use financial data as an indicator of their environmental performance".

Thus, the World Industry Council for the Environment endorses disclosure based on financial, quantitative and qualitative criteria.

A similar perspective on corporate environmental reporting from within industry is provided by the International Chamber of Commerce<sup>19</sup> which has produced the "ICC Business Charter for Sustainable Development: Principles for Environmental Management" (ICC, 1991). This has been reproduced in appendix B, table 5. Also from an industry perspective, the Confederation of British Industry guidelines, "Introducing environmental reporting: Guidelines for business" (CBI, 1994) use an abridged version of the contents of a corporate environmental report suggested by the World Industry Council for the Environment's guidelines. This would therefore suggest that the Confederation of British Industry also endorses disclosure in all three forms.

Further recommendations with an industry perspective are the Public Environmental Reporting Initiative, or PERI guidelines as they are commonly known (PERI, 1994). They were developed between 1992 and 1993 by a number of corporations from different industrial sectors with input from various stakeholders. These guidelines are

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<sup>19</sup> It should be noted that the World Industry Council for the Environment is an initiative of the International Chamber of Commerce.

intended for adoption on a voluntary basis, by any company wishing to share information with the public about its management of the environment. An important aspect is that each reporting company has to decide how, when, and to what extent the PERI reporting components should be presented. These guideline components have been reproduced in appendix B, table 6. The types of disclosure are not formally addressed in this report. Examining each of the relevant components, the emphasis is placed upon quantifying and describing, which are synonymous with quantitative and qualitative disclosure respectively. An example of the qualitative approach can be seen in the component "organisational profile", which suggests that information is provided which allows environmental data to be interpreted in context. For example, the company could provide information on (PERI, 1994, page 1):

"The nature of environmental impacts of the organization's operations".

This suggests that a qualitative approach is used. An example of quantification can be seen in the component in "environmental releases" (PERI, 1994, page 2) :

"Environmental releases are an indicator of an organization's impact on the environment. Provide information that quantifies the amount of emissions, effluents or wastes released to the environment".

Financial indicators are only considered in terms of the component, "environmental compliance" and this, only in terms of (PERI, 1994, page 5) :

"Significant fines or penalties incurred (define in accordance with local situation, e.g., over \$25,000 in the U.S.) and the jurisdiction in which this was applied".

Therefore, the PERI guidelines endorse the use of quantitative and qualitative disclosure with limited use of financial.

The last guidelines arising from industry deal specifically with the chemical industry, namely the European Chemical Industry Council's publication, "CEFIC guidelines on



environmental reporting for the European Chemical Industry" (CEFIC, 1993), which proposes a common structure for corporate environmental reporting. Details of this are reproduced in appendix B, table 7. The main objective of the guidelines was to create comparability between chemical companies, and the report suggests that chemical companies adopt the proposed common structure. However, the guidelines do leave companies the "necessary" flexibility to fulfil their own needs, specifications or policies. The European Chemical Industry guidelines provide limited advice on appropriate types of disclosure. The foreword includes "environmental research and development", but disclosure type is not prescribed. Therefore, some combination of financial, quantitative or qualitative may be assumed. Section four, entitled "plans, objectives, goals", is the only section which specifically mentions a type of disclosure, with both qualitative and quantitative objectives. Section six entitled "data" (which is comparable) includes: "emissions data", based on quantitative information; "companies' prosecutions" (optional), which could be either quantitative or financial, or even qualitative, and; "spending on environmental protection", which suggests a financial basis. Therefore, these guidelines also suggest that disclosure on a financial, quantitative, and/or qualitative basis, may be useful to interested parties.

Following is a consideration of what site-specific reporting can be useful to interested parties, from an industry perspective. The Chemical Industry Association's publication, "Reporting to your local communities" (CIA, 1995) is derived from the European Chemical Industry Council's guidelines discussed above. The Chemical Industry Association's contents of a site report can be viewed in appendix B, table 8. The Chemical Industry Association classifies types of disclosure prominently in the contents of a site report, which includes the following major sections: qualitative information;

quantitative data; products, and; further information, each of which is further subdivided. The qualitative section includes a category entitled "environmental targets and objectives" (CIA, 1995, page 7) :

"When establishing these objectives, you should be fully aware of the potential costs and possible legal implications as well as attempting to quantify the benefits".

This illustrates how information can cross all three types of disclosure, and that information does not fall into distinct categories. There is a need for information to be disclosed on more than one basis. The quantitative data section includes a category entitled "environmental indicators and targets". This represents, in effect, the quantitative response to "environmental targets and objectives" found in the qualitative section, again suggesting multiple bases for the disclosure of information items. Disclosure on a financial basis is included in the quantitative data section, under the category "cost savings". Also, in the sub-category "environmental indicators and targets", cost effectiveness is discussed (CIA, 1995, page 9) :

"Some effort should be made to deal with the environmental consequences, if only to make the point that further emission reduction may not be cost effective in terms of environmental benefit".

The Chemical Industry Association's guidelines therefore advocate strongly the use of all three types of disclosure for corporate environmental reporting.

A comparison of the normative wish lists arising from the United Nations with those derived from industry, it is clear that industry demands far less from companies in terms of the complexity and detail of environmental disclosure. This may be due to the different emphasis placed on environmental disclosure by the two groups. The United Nations proposes a user perspective, whereas industry arises from a producer perspective.

In contrast, the next set of principles outlined may be seen to present a compromise between the user and producer perspectives. Arguably, the most well-known guidelines are those outlined by the Coalition for Environmentally Responsible Economies, or CERES (1992). The Ceres Principles were developed as a result of the Exxon Valdez disaster. As of March 1996, there were 52 companies worldwide endorsing the Principles. They are presented in appendix B, table 9, part A. Companies are required to embrace all the Principles, or none. The Principles do not address which disclosure may be available to interested parties. However, the following would suggest that disclosure based upon the principles would be useful (CERES, 1992, introduction):

"We intend to make consistent, measurable progress in implementing these Principles and to apply them to all aspects of our operations throughout the world".

Types of disclosure are not addressed but the introduction mentions (CERES, 1992, introduction):

"...consistent, measurable progress in implementing these Principles..."

The implementation of the Principles will require quantitative disclosure, in terms of the Principles of "reduction and disposal of wastes" and "energy conservation". Alternately, the Principles of "protection of the biosphere", "sustainable use of natural resources" and "risk reduction" all contain both quantitative and qualitative elements. Principle ten, "audits and reports", states that (CERES, 1992):

"We will annually complete the CERES Report, which will be made available to the public".

The actual disclosure which companies are required to make in the Ceres report is interesting and can be seen in appendix B, table 9, part B. Overall, the Ceres principles require slightly more ambitious reporting than the industry wish lists.

From another perspective, the government's contribution to environmental disclosure has been through the Department of the Environment's Advisory Committee on Business and the Environment (ACBE). The members comprise directors of large companies such as British Gas and Pilkingtons. The terms of reference are: to provide dialogue between government and business on environmental issues; to help mobilise business into demonstrating effective environmental practice and management, and; to provide a link with, and focus attention on, international business initiatives on the environment. As a result of their work, the Advisory Committee on Business and the Environment has published a report entitled "Environmental Reporting and the Financial Sector: Draft Guidelines on Good Practice" (ACBE, 1996b, see also, EAAR, March 1997). In this they suggest that there are three vehicles for the disclosure of environmental information. These are the annual report, the Operating and Financial Review, and a separate environmental report, or section in the annual report. Details of the proposed guidelines for good practice in environmental reporting, by business, can be found in appendix B, table 10. The guidelines do not take the mix and match approach, adopted by some of the others, discussed earlier, as they make recommendations concerning what should be reported. However, this is all within a voluntary framework. It is important to note that, although the Advisory Committee on Business and the Environment's guidelines deal with the financial sector, they also advocate disclosure on a quantitative and qualitative basis, where appropriate. It would seem appropriate that the financial sector should use information which is not solely based on financial criteria. This view is also held by the European Federation of Financial Analysts' Societies (see EFFAS, 1994). Comparing the government recommendations with the industry and user perspectives above, it seems that the government is more in line with a user approach, as they are more demanding of companies.

Professional accounting bodies have also produced guidelines on corporate environmental disclosure. The professional accounting literature and in particular, the publication by the Institute of Chartered Accountants in England and Wales, "Business, accountancy and the environment: A policy and research agenda" (Macve and Carey, 1992) suggests possible approaches to corporate environmental disclosure (see appendix B, table 11). The proposals were compiled by the Environmental Research group of the Institute. They provide some indication of how the members of the research group see the development of corporate environmental reporting in the future. This indicates the importance that the professional accounting bodies place on environmental reporting.<sup>20</sup> These professional recommendations seem to be similar in requirements to those arising from industry, reflecting what can be achieved, given the apparent reluctance of companies to disclose.

The consultancy arms of the professional accounting firms are also active in the area of corporate environmental reporting, for example, KPMG's annual UK environmental reporting survey (KPMG, 1996). This survey classifies environmental reporting into eight categories (see appendix B, table 12). Although this is not a set of guidelines, it does provide an indication, from the practitioner's perspective, of how useful corporate environmental information can be classified, and what disclosure is useful.

The European Federation of Financial Analysts' Societies have also published their views in this area (EFFAS, 1994). This publication, entitled "Environmental Reporting and Disclosures: The Financial Analyst's View" represents a user perspective (see appendix

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<sup>20</sup> It is notable that the Chartered Association of Certified Accountants (ACCA) is also financing research in this area.

B, table 13). The interesting aspect of the Society's "catalogue of requirements" is that it is not a mix and match, menu-driven, approach. It is a prescriptive set of requirements which are ambitious in nature, reflecting more of the user than the producer perspective.

The Canadian Institute of Chartered Accountants' publication, "Reporting on environmental performance" (CICA, 1994) puts forward compulsory components (appendix B, table 14). In the environmental reporting framework of the Canadian Institute of Chartered Accountants, qualitative disclosure is restricted to only one section, namely that of "environmental performance analysis" (CICA, 1994, page 71) :

"When it is not possible to provide data to support performance claims, full narrative disclosure is encouraged".

In 1991, the Chartered Association of Certified Accountants introduced an annual Environmental Reporting Award scheme (see Owen, Gray, Adams, 1992). The judges represent normative views rather than those of interested parties. Items that the judges sought in the environmental reports included: whether disclosure seemed to go beyond general intent; whether the disclosure was auditable; disclosure on a financial, quantitative and qualitative basis was investigated; compliance with standards (legislation or industry norms); independent external verification; that the disclosure was reliable; that reporting represented core basic activities; the provision of trend information and comparative data; the provision of a statement of future actions that was auditable, and; a commitment to repeat disclosure.

Academic accounting literature, concerning types of disclosure, falls into two schools. The first school, represented by Gray *et al.* (1996a) concentrates on: corporate social reporting; extending the accountability of firms, and; how accountants could be involved

in this process. The use of different types of disclosure is central to this group. The second school, represented by Bennet, James and Lane (1996) is interested in using financial accounting methods, and applying these to environmental problems. The environment is viewed as a risk to be managed, and one which can be managed through a financial framework. Accountability and different disclosure types are not central to this school. The literature most relevant to this discussion is in the area of corporate social reporting. Gray *et al.* (1987a) have produced required characteristics of a corporate social report (see appendix B, table 15). The current questionnaire has attempted to incorporate these characteristics. However, as Mathews (1993, page 77) points out :

"Although important as an initial statement, the set of characteristics does not provide any direction or detail about what should be included (other than general indications)".

This gives us an evaluative framework from which acceptable practice may be deduced. Further work by Gray *et al.* (1996a), although not extensive in detail, provides more indication relating to the direction that the contents of a corporate social and environmental report (see appendix B, table 16). Lastly, Gray, Bebbington and Walters (1993) have produced an extensive list of the types of issues involved in corporate environmental reporting. These have been reproduced in appendix B, tables 17 and 18. Although they are not meant to represent a coherent framework, they do provide an indication of what useful corporate environmental information may represent.

The treatment of environmental reporting, as a way of managing another corporate risk, is presented by Bennet *et al.* (1996) in the British Telecom publication "Environmental accounting in industry: A practical review" . This type of work represents the *status quo*,

and does not address accountability. A good indication of this approach can be seen in the following quote (Bennet *et al.*, 1996, page 6) :

"...companies wishing to pursue current best practice should focus on identifying financial data associated with either significant environmental impacts or specific internal environmental policies or procedures, rather than seeking to redefine the existing financial framework to identify all data relevant to environmental performance".

A normative view of the research is that this work, although important, is just part of the wider view of reality. Financial disclosure is fundamental to the Bennet, *et al.*, *inter alia*, approach.

To summarise, this section has considered a series of wish lists generated by normative parties. Looking at the guidelines presented in appendix C, similarities between these wish lists may be seen which could form an implicit conceptual framework among normative parties for corporate environmental disclosure. Further, the wish lists range from those which prescribe basic, or even primitive environmental disclosure (arising from the industry perspective, for example) and those which recommend more ambitious, or mature reporting. The more user-oriented wish lists, such as those from the United Nations fall into this category of recommending more ambitious disclosure.

### **3.3.3 Wish Lists: Interested Parties**

This section considers a series of wish lists arising from interested parties. These wish lists represent the actual requirements of users. Each one of the wish lists has been chosen because it differs in the way the wish list was developed, and the reasons why it was developed. However, the end results are very similar indeed. This section will establish the current requirements of interested parties according to "wish lists" produced



by interested party organisations. In this section, the characteristics of the interested parties' "wish list" are covered in detail. There is no definitive "wish list". All the interested party groups have their own preferences. Therefore, a compromise of four "wish lists" is proposed here as a basis for discussion. Each "wish list" is different in its own right. Yet there are striking commonalities between them.

The first "wish list" to be discussed was developed by an international body. In the United Nations publication "Engaging stakeholders: 2. The case studies" (UNEP, 1996b), the needs of stakeholders were revealed by asking a small sample of 12 stakeholders about their corporate environmental information needs.<sup>21</sup> The survey (UNEP, 1996b) revealed that the selected stakeholders needed quantified, comprehensive data in 12 areas.

The stakeholders' requirements are adequately included in the framework proposed by the United Nations (see UNEP, 1994 and 1996a) - their preferences are for quantified disclosure (including financial) but there is also scope for disclosure on a qualitative basis as well. The findings represent "a view of reality".

Another approach to ascertaining the needs of stakeholders arises from the Ceres Principles. The approach involved establishing both a set of normative principles, and a consensus with commerce, to facilitate useful disclosure (see Hoffman, 1996). The Principles therefore underpin disclosure, whereas the interpretation of the Principles, the "wish list" itself, is found in the Ceres Report. The only British company to endorse the

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<sup>21</sup> In fact, there were 11 stakeholders and a grouping called "Rating Agencies" which incorporated the views of three agencies. The groups were classified as market or institutional users and citizens groups.

Ceres Principles and, as such, to produce a Ceres Report, is Body Shop. The Ceres Report from Body Shop (Body Shop International, 1995) exemplifies useful environmental disclosure. The contents of the Ceres Report can be viewed in appendix B, table 9, part B. All sections of the report are compulsory, and fully compatible with the current research. The approach used to complete the Ceres Report centres on responses to 91 questions, divided between 12 sections. The Body Shop Ceres Report has been put forward for verification, although many of the questions are either unanswered, or the response is short. This is not a criticism of Body Shop, but shows the diversity of companies which the Ceres Principles attempt to reach. The emphasis is on United States legislative requirements. These limit the use of this approach for British audiences. However, within the spirit of reporting, Body Shop has attempted to make the information useful to a British audience. The emphasis lies with quantitative disclosure in the Ceres Report, with some qualitative disclosure and financial disclosure used minimally in the compliance section. This "wish list" is sponsored by a coalition of environmental pressure groups, and is based on a set of underlying principles designed to encourage commerce to protect the environment and discharge its corporate accountability to society. This therefore represents "a view of reality" from another stakeholder group.

A stakeholder group with significant credibility is the financial community. The European Federation of Financial Analysts' Societies (EFFAS, 1994) has produced its own framework for environmental reporting and disclosure (see appendix B, table 13). This "wish list" is sponsored by the investment community and is based on financial, quantitative and qualitative disclosure. The approach adopted treats the environment as

a corporate risk to be managed, much like foreign exchange, for example (see Collier, 1995). This, again, represents another stakeholder reality.

IBM took a different approach in its publication, "Consulting the stakeholder: A profile of IBM UK's environmental performance" (IBM, 1995). In consultation with ECOTEC Research and Consulting Ltd. (environmental consultants), IBM have developed "A new framework for environmental reporting".<sup>22</sup> This centres on two key components: "stakeholder consultation", used to identify the parameters for assessing and reporting environmental performance, and; "the environmental performance profile" which presents a visual summary of IBM's environmental performance. The importance of the IBM/ECOTEC approach is that although it explores a "wish list" for IBM's stakeholders, it may also be applied to any company in the information technology industry, and with adjustment, to companies in general. However, comparability between companies is unlikely, even in the same industry, given the emphasis on different stakeholders. The care taken to develop the "wish list" (or IBM's "performance profile") can be gauged from the methodology (IBM, 1995, page 6) :

"ECOTEC consulted 75 of IBM's stakeholders and asked them to identify the areas in which they wanted to see IBM's environmental performance reported".

The views of the stakeholders were then condensed to 11 categories (see appendix B, table 19). Construction of IBM's performance profile involved five steps. The first was stakeholder consultation. The second involved ranking the 11 categories into "priority areas". The third step concerned the completion of ECOTEC's "Environmental best practice questionnaire", by selected IBM personnel. Step four involved ECOTEC in

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<sup>22</sup> The approach of stakeholder consultation has also been adopted by Glaxo in their discussions with ERM (environmental consultants). See EAAR, December, 1996. Gray *et al.* (1996a) suggest that an important part of a conceptual framework for corporate financial reporting is dialogue between shareholders and companies.

auditing these answers, and step five resulted in IBM's environmental performance profile. A graph shows the 11 parameters in rank order of importance to the stakeholders and in relation to IBM's performance to ECOTEC's assessment of potential performance. This is an interesting and innovative approach to the disclosure of corporate environmental information. However, the validity of the process depends on the role that ECOTEC plays as auditor in the process. Of particular concern, is the use of a select group of stakeholders, as the arbitrageurs of the "wish list". This differs from the United Nations approach (see UNEP, 1994 and 1996a) which regards stakeholders as central to the process. In one sense, the approach used by IBM/ECOTEC can be considered normative in that IBM/ECOTEC chose the stakeholders. Although this is a specific industry/company example of useful information, there are certain aspects which overlap into a general conceptual framework approach. These include environmental management policy and strategy, as well as disclosure on energy and transport.

The IBM/ECOTEC approach involves mainly qualitative disclosure due to the compilation of an environmental performance index. ECOTEC performs all the analysis so that the validity of the approach depends solely on the credibility of the ECOTEC environmental consultants. However, in 1993, IBM produced "IBM UK and the Environment: Progress Report" (IBM, 1993), which included financial, quantitative and qualitative disclosure. Perhaps IBM's next step will involve producing an environmental report which presents the needs of stakeholders, with financial, quantitative and qualitative data.

The four examples used to discover stakeholders' needs discussed in this section can be divided into two general approaches. The first asks a select group of stakeholders what

their needs are (the IBM/ECOTEC and United Nations' approach). The second considers needs of specific stakeholders (the Ceres and European Federation of Financial Analysts' approach). There are few fundamental differences between the resulting "wish lists", such as IBM/ECOTEC concentration on the information technology industry and the European Federation of Financial Analysts' emphasis on accounting requirements. The similarities are many. Using the European Federation of Financial Analysts as a basis, it can be seen that their requirements can be mostly accommodated within the other wish lists. Taken together, they can be said to represent an implicit conceptual framework for corporate environmental reporting from the perspective of interested parties.

#### **3.3.4 Summary**

In this section, the environmental reporting practices of company management have been considered, as have the requirements of interested parties and the suggested disclosure of normative parties. Seen superficially, there is a consensus within each group representing an implicit conceptual framework. However, the environmental reporting survey of company disclosure only represents best practice. Questions need to be asked about companies generally, is the information disclosed by companies really useful, and is it adequate?

Company practice and the wish lists will form the basis of the content of the questionnaire survey to the normative and interested party samples in relation to what they want from corporate environmental reporting, what information is useful to interested parties and any commonalities between financial and corporate environmental reporting. Also company management will be surveyed to find out their current reporting

practices with the same terms of reference. (exactly how these "wish lists" have been incorporated into the questionnaire is discussed later in section 5.6). This allows an implicit framework to be formulated. Empirical research can then be used to formulate the basis of an explicit conceptual framework for corporate environmental reporting.

### **3.4 Survey of Issues in Corporate Environmental Reporting**

In this section, a literature survey is presented covering issues within the perceived implicit conceptual framework for corporate environmental reporting. All these issues need to be surveyed as they play two important roles in the thesis. First, they provide part of a review of corporate environmental reporting which acts as a basis for the theoretical model development in chapter four. Second, the issues need to be reviewed in order for the questionnaire to be developed.

#### **(i) The Motives for Corporate Environmental Disclosure**

In the present, predominantly voluntary framework for corporate environmental reporting, it is important to consider why some companies disclose environmental information, as this allows an understanding of the disclosure *per se*. Further, why do companies subject themselves to possible criticism by disclosing information when there is no legal obligation for them to do so. Is this a result of ethical, or market, considerations, or some other consideration? Or, is it a form of masochism? (as suggested by Benston, 1982a). This section begins with a general discussion of motives and then considers four theoretical perspectives. The theoretical motives surveyed in this chapter are used in developing the disclosure component in the following chapter of the

thesis. In chapter four, the motives are reinterpreted and analysed in terms of the ethical, legal, marketing and political rationales which may underpin corporate environmental disclosure, as part of the theoretical conceptual framework investigated throughout the thesis. Appreciating the rationale for voluntary corporate environmental disclosure is, for the purposes of this thesis, a crucial aspect of developing the model incorporated in the proposed conceptual framework. The discussion begins with a general overview of motives arising from the literature then distinguishes between four major motivating areas for corporate environmental disclosure.

A number of possible motives for voluntary corporate environmental disclosure have been suggested. Some arise from the wish lists discussed above, for example, the voluntary guidelines of the World Industry Council on the Environment (WICE, 1994) indicate three benefits attributable to a company which reports environmentally: "business benefit"; "improved performance", and; "enhanced reputation" (see also, Willums and Golüke, 1992; Welford and Gouldson, 1993; Cannon, 1994; Escoubès, 1996, and; Sancassiani, 1996). The Confederation of British Industry guidelines (CBI, 1994) list five reasons why companies should report as follows: reporting represents an integral part of improving environmental performance; environmental disclosure demonstrates sound environmental risk management; reporting increases confidence and improves relations; represents a form of political lobbying, and; enables the company to anticipate and comply with the increasing amounts of government regulation. In relation to the political lobbying motive (CBI, 1994, page 4) :

"Reporting ... is a requirement of the Environment Business Forum - helping to demonstrate businesses' collective commitment to sound management and gain a better political climate of environmental legislation, leading to a sensible mix of regulation and voluntary action based on a well-informed market".

The Ceres Principles (CERES, 1992) suggest several motives for voluntary corporate disclosure of environmental information and emphasise the value of company ethics. The disclaimer to the Principles also states that investors and society need public environmental disclosure for decision-making purposes.

The United Nations (UNEP, 1994 and 1996a) guidelines suggest that some company managers are using the voluntary framework to prepare them for possible future legislation. Further, the use of voluntary codes by corporations could lead to mandatory disclosure being mitigated or avoided. These guidelines also suggest that peer pressure from companies in the same industry may also motivate disclosure. The Advisory Committee on Business and the Environment's guidelines (ACBE, 1996a and 1996b) incorporate a broad range of possible motives for environmental disclosure into the following statement (ACBE, 1996a, page 37):

"The arguments in support have evolved over the years, but they are now encapsulated in a mix of enlightened self-interest and good corporate governance. With health and safety management, environmental management is integral to good business practice".

Further, the European Federation of Financial Analysts (EFFAS, 1994) imply that a possible motive for companies to voluntarily disclose financial environmental information could be to attract investment (see also Mastrandonas and Strife, 1992).

However, they state that (EFFAS, 1994, page 3) :

"Financial analysts have also a responsibility, since they play an important role in allocating financial resources to different investments. It is therefore highly desirable, that eco-efficient companies get appropriate support from financial analysts. Our willingness to embark on such a considerable subject reflects, therefore, our conviction that financial analysts have a great deal to say about environmental issues".

Also from a professional perspective, the Environmental Research Group of the Institute of Chartered Accountants in England and Wales (Macve and Carey, 1992) suggests that



pressure from the market place and from regulatory authorities are the main motives for corporate environmental disclosure (see also CICA, 1994, and the Environmental Protection Agency, EPA, 1995).

Looking to the future, "Tomorrow's company" (RSA, 1995) concentrates on the company's license to operate as a motive for corporate environmental reporting. The forces at work<sup>23</sup> on a company's license to operate are standard, regardless of the issue. The report, "Coming Clean" (DTTI, 1993) adopts an in-depth approach to discover why companies report environmentally and proffers public relations and duty to the environment as motives. Lesser reasons included: future legal requirements; shareholder pressure; campaigner pressure; customer pressure; competitive advantage.

A survey conducted by Touche Ross management consultants (TR, 1990) reveals that environmental disclosure by one third of the companies surveyed has been motivated by public interest issues and pressure groups. This clearly represents a political lobbying motive. In contrast, a survey by KPMG (1996) lists four driving forces in environmental reporting, namely: pressure from stock exchanges; peer pressure; customer pressure, and; the introduction of environmental management standards.

Companies themselves have offered a number of reasons for their environmental disclosure. For example, IBM (1995) suggests that much of environmental reporting aims to demonstrate a company's conduct to the environment.

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<sup>23</sup> The "Tomorrow's Company" report (RSA, 1995, page 6) proposes eight forces affecting a company's licence to operate. These are: legal/regulation; industry and market standards; industry reputation; media; political opinion; public opinion/confidence; pressure groups, and; individual attitudes of customers, suppliers, consumers, employees, investors and community.

From an academic accounting perspective, Gray *et al.* (1996a) provide an exhaustive list of the motives for corporate social reporting including: ethics; individual commitment; accountability; legal; code of practice; anticipated regulation; to forestall regulation; marketing; public image; defence; to distract attention; influence perceptions; response to pressure; go ahead of/stay with competitors; experimentation; previously given commitment; ethical investors; to overcome fears of secrecy; to maintain a position of power, and finally; legitimisation.

The discussion now considers four theoretical perspectives which may provide motives for voluntarily corporate environmental disclosure, namely: a markets motive; a social motive; a political motive, and; an accountability motive. Each arises from different realities held by different sectors of society who require information to make economic decisions, or decisions to assess accountability. Although no theory relates specifically to corporate environmental reporting, theoretical discussions of corporate social reporting are relevant, as environmental reporting has been classified under corporate social reporting (see, for example Estes, 1975; Ernst and Ernst, 1978, and; Skerratt and Tonkin, 1982).

*A Markets Motive for Voluntary Disclosure of Corporate Environmental Information:*

From a free market perspective<sup>24</sup> demand is met through the market mechanism. A possible markets motive underlying voluntary corporate environmental disclosure rests on whether there is a natural demand for such information: if this information is demanded the market will provide it. Resulting disclosure would be voluntary, priced

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<sup>24</sup> See, for example, Samuelson (1976) for the underlying free market and perfect competition assumptions.

by shifts in supply and demand. Therefore, support for the markets motive arises from evidence of voluntary disclosure, rather than that arising from regulation. Watts and Zimmerman (1986) provide evidence of voluntary corporate financial reporting. In Britain, major companies are voluntarily producing corporate environmental reports (see KPMG, 1996, and; section 3.3.1 above) implying that there is a demand for this information. Also the suggestion that additional corporate environmental disclosure will increase stock market efficiency, as such information will be rapidly incorporated into share prices (see Mathews, 1993) implies that this information can be decision useful, in an economic sense. The expanding interest in environmental information within the financial investment community also represents a market demand, reflected in the growing number and size of ethical investment funds, which generally promote corporate environmental reporting<sup>25</sup> (The Economist, September, 1994a; Holden Meehan, 1994; and; Ethical Investor, 1996). Banks also require environmental disclosure about customers' industrial pollution, to assess any environmental damage which they may become responsible for if the company is liquidated (see The Economist, May, 1994). However, Harte, Lewis and Owen (1991) found that ethical investors do not have sufficient information to appraise a company for investment purposes, and Business in the Environment (see BIE, 1994) found that stock brokers and analysts have little interest in corporate environmental disclosure. In summary, there is mixed evidence to support a market demand for corporate environmental information.

However, Benston (1982a) considers that self-serving or public relations (see also Owen, 1992) motives for corporate environmental disclosure are more feasible than a free

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<sup>25</sup> Even non-ethical investors may demand such information, if it enables them to better assess potential financial risks, given that companies may be liable for clean-up costs, and environmental damages.

market motive. Further he showed that non-social, decision-useful, voluntary corporate disclosure takes place, emphasising the difference in nature between financially, and socially-oriented disclosure.<sup>26</sup> Overall, he suggests that companies which report socially as a result of regulation, or due to pressure groups, give the appearance of compliance, rather than actual compliance.<sup>27</sup>

Alternatively, if there is a demand for corporate environmental information, but it is not being met by the market mechanism, one explanation could be the existence of market failures, such as: public good; externalities, and; informational asymmetry. Positive accounting theorists have considered accounting as a public good (for example, Watts and Zimmerman, 1986) suggesting that (Leftwich, 1980, page 198):

"... accounting information has the distinguishing feature of a public good: that is, the consumption of the good by an individual does not diminish the quantity available for others".

The public good argument for accounting disclosure assumes that: the information must be disclosed to the public; the marginal cost of a company disclosing accounting information must be small, and; there is a free rider effect.<sup>28</sup> If corporate environmental disclosure represents a public good, then corporations need to discharge their public accountability (see ASSC, 1975, and; RSA, 1995) by providing information for the financial market. Indeed, the public good argument may be more relevant for corporate environmental reporting than for financial as the stakeholder group is arguably larger,

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<sup>26</sup> It is notable that Benston's strong delineation between financial and social information is dismantled in the case of the information, required by ethical investors, discussed above.

<sup>27</sup> However, all this would depend on the form the actual regulation took and if there was any monitoring and/or audit.

<sup>28</sup> The free rider effect means that any information made available to paying parties is also available to others who have not paid for its production.

consisting of more than solely economic stakeholders. In relation to externalities, Beaver (1989, page 180) states :

"An externality exists when the actions of one party affect other parties who are not charged (or compensated) via the price mechanism. This constitutes a form of market failure".

There can be little doubt that corporate consumption of environmental resources involves externalities (see Cairncross, 1991, and; Hardin, 1993). Environmental disclosure focuses on both negative, undesirable externalities, such as pollution or careless waste disposal, and positive externalities, such as the creation of a beautiful reservoir.<sup>29</sup> Perhaps positive externalities are more readily disclosed voluntarily than negative externalities (see Gray *et al.*, 1996a, and; Harte and Owen, 1992). Lastly, informational asymmetry represents a market failure which manifests itself in six forms (see Leftwich, 1980): monopolistic control over information by management; the naive investor problem (suggesting that accounting information cannot be interpreted by "naive" stakeholders without adequate training); functional fixation (where stakeholders misunderstand the meaning of accounting numbers); meaningless numbers (where stakeholders do not understand various definitions used to calculate accounting figures); diversity of accounting procedures, and; the lack of objectivity in financial reporting. Overall, perhaps informational asymmetry represents the most serious market failure, as information which is voluntarily disclosed has major inadequacies and an issue as sensitive as the commercial use of the environment is likely to encourage secrecy, rather than transparency (see Gray, 1992).

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<sup>29</sup> An example of a positive externality is found in Cheung (1973) of the bee keeper, who reaps the benefit of his neighbour's pollen, to produce honey.

Market failures may therefore provide a rationale for increasing corporate environmental disclosure, perhaps through legislation. However, if there is no evidence of such failures the rationale collapses. A lack of corporate environmental reporting may indicate insufficient demand rather than a market failure, suggesting that market failures are perceived by society, and are normative in nature. However, Leftwich (1980) considers that all these forms of market failure may be rejected. His arguments can be applied equally to corporate environmental information as a facet of all accounting information. He rejects the externalities argument, in that only government policy, or normative judgements can determine whether or not an externality exists (see also, Hines, 1988).

If market failures are perceived (normatively) to exist, in relation to corporate environmental reporting, then either self-regulation or government regulation may be a means of correcting the market failure. The regulated free market approach is an attempt to reduce the size of the "big stick" held by companies (see section 3.2.1). Government regulation would involve mandatory disclosure by companies in certain industries, with the creation of regulators, such as the Environment Agency, enforcing the law. Self-regulation by industry and the private sector involves codes of conduct being established (such as the Advisory Committee on Business and the Environment, see ACBE, 1996a). However, the costs of regulating accounting procedures are not insubstantial (see Watts and Zimmerman, 1986)

*A Social Motive for Voluntary Disclosure of Corporate Environmental Information: A possible social motive for voluntary disclosure of corporate environmental information rests on three prominent theories: stakeholder, legitimacy, and political economy theory. These are not competing theories when applied to corporate social reporting, but may*

be considered complimentary to each other (see Mathews, 1993). Ansoff (1965) applied "stakeholder theory" to a definition of corporate objectives, including the need to balance the conflicting demands of stakeholders. Freeman (1983) discusses the strategic implications of stakeholder influences on corporate decision making. Corporate management must be able to assess stakeholder demands so as to achieve strategic objectives, and therefore corporate social reporting can be seen in the context of strategic decision making (see Ullman, 1985). This is a systems based view of the relationship between a company's behaviour and its stakeholders, incorporating the dynamic and complex nature of the relationship. Gray *et al.* (1996a) have identified two variants of stakeholder theory. The first considers that society identifies (normatively) which stakeholders companies are accountable to, whereas the second considers that the company makes this normative decision. Roberts (1992b), in an empirical study of stakeholder theory, finds that there is evidence to support corporate social reporting within such a framework.

Legitimacy theory stems from social contract literature (Mathews, 1993) and implies that companies operate in society *via* a hypothetical social contract between themselves and society. From this perspective, voluntary corporate disclosure represents a reactive strategy which reduces exposure to a range of risks (Preston and Post, 1975; Guthrie and Parker, 1989 and; Patten, 1992). Shocker and Sethi (1974) emphasise the importance of the social contract to company survival and growth, and Guthrie and Parker (1989, page 344) state that:

"... [the company] needs to disclose enough social information for society to assess whether it is a good corporate citizen".

Disclosure is one way in which corporations can legitimise their actions and justify their continued existence (Lehman, 1983, and RSA, 1995) by fulfilling their social contracts.

This suggests symmetry between the corporate value system and society (see Gray *et al.* 1996a). Lindblom (1994) identifies four broad legitimisation strategies for a company suffering poor performance.<sup>30</sup> Consequently, legitimacy theory explains why companies may voluntarily disclose only positive aspects of their performance (Harte and Owen, 1992). Gray *et al.* (1996a) advocate two variants of legitimacy theory: the first focuses on legitimacy of the individual company, and the second considers legitimacy of the system (see also Mathews, 1993). Preston and Post (1975) explain that if companies do not adopt legitimisation strategies, performance problems will be discussed in the public policy arena and legislation may follow (Post, 1978). Guthrie and Parker (1989) showed that legitimisation may not be a primary explanation for social reporting, yet Patten (1992) found support for legitimacy theory. Deegan and Rankin (1996) showed that companies which are prosecuted disclose more positive environmental disclosure than those which are not, concluding that these companies needed to legitimise the existence of their operations by increasing positive environmental information disclosure. Overall, there seems to be some evidence to support legitimacy theory as a basis for corporate environmental disclosure.

Political economy theory concerns the social, political and economic framework within which human life takes place (Gray *et al.*, 1996a).<sup>31</sup> Cooper and Sherer (1984) introduced political economy theory into accounting, their main premise being (Cooper and Sherer, 1984, page 1) :

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<sup>30</sup> These are: "educating" stakeholders in how performance may be improved; changing stakeholders' perception of events, rather than performance; diverting attention from poor performance to a positive issue, and; changing external expectations concerning performance.

<sup>31</sup> Gray *et al.* (1996a) suggest two variants to political economy theory: "classical political economy" which involves structural conflict, inequality, and the role of the state, and; "bourgeoisie political economy" which centres on the interactions between a company and groups in society, and is used to explain the lack of corporate social reporting.



"...to understand and evaluate the functions of accounting within the context of the economic, social and political environment in which it operates".

From an accounting perspective, political economy theory focuses on: power and conflict in society; the specific historical/institutional environment of the society in which it operates, and; the acknowledgement that accounting can reflect different views and concerns. This theoretical approach is normative, descriptive, and critical and questions the legitimacy of the capitalist system *per se*.

Overall, Gray *et al.* (1996a) consider that stakeholder, legitimacy and political economy theory (and their variants) are neither discrete, nor wholly specified, each providing a different level of resolution. Political economy can be considered to embody the widest resolution, considering the system as a whole, whereas legitimacy theory considers the legitimacy of the market system. Each theory provides some explanation of why companies disclose environmental information voluntarily. All are based on corporate accountability to society, implying that disclosure should adopt an accountability decision usefulness approach, so that stakeholders can make a decision on whether, or not, a company has discharged its accountability.

#### *A Political Motive for Voluntary Disclosure of Corporate Environmental Information:*

A firm indication of the accountability of companies for their consumption of environmental resources and pollution, arises from the increased importance of environmental issues in the political arena. A political motive could explain voluntary disclosure of corporate environmental information, in that companies are encouraged to report environmentally due to political pressure. The creation of the Department of the Environment in the United Kingdom spokesman on environmental issues reflects a political interest. It has led to the establishment of a parliamentary Committee on the

Environment which monitors the policy, administration and expenditure of the Department. Political interest in environmental issues is also reflected in the creation of the Conservative Ecology Group (established in 1977), the Green Alliance (established in 1978), the Green Party (established in 1972), the Socialist Environmental and Resources Association (established in 1973), and the Tory Green Initiative (established in 1988), *inter alia*. The growth and decline of the Green political movement is well-documented in Young (1993), with Dobson (1990) distinguishing between the "shallow" and the "deep" ecology movement. The large scale integration of environmental issues into the political spectrum has created a new reality: one which attempts to integrate environmental issues into all aspects of mainstream politics. Politicians can no longer ignore environmental issues, indeed Young, White, Hoggart, Wintour, Hencke and Smithers (1997) state that for the last British election, each of the political parties had a policy on energy taxation, carbon dioxide emissions, sulphur dioxide emissions, air quality, renewable energy, and nuclear power. They also reported that in a 1996 MORI poll, almost a third of respondents stated parties' environmental policies would influence their voting, almost the same proportion as for economic policy. Overall, environmental issues have been incorporated into an everyday political reality. Consequently, as companies are believed to be the main culprits of environmental degradation, it is only a matter of time before they are made legally accountable for their activities. However, a strategy of self-regulation by companies, involving environmental disclosure, is one way by which they can stem the legislative tide.

*An Accountability Motive for Voluntary Corporate Environmental Disclosure:* The normative view that corporations are accountable to society is supported by, *inter alia*, the Corporate Report (ASSC, 1975), Briston and Dobbins (1978), Parkinson (1993),

Perks (1993), Mathews (1993) and Gray *et al.* (1996a). However the existence of corporate social reporting is insufficient evidence for accountability, as the reports may be no more than self-serving public relations exercises (see above). According to Benston (1982a) corporations are accountable to three inclusive groups, shareholders, stakeholders, and society but emphasises that corporate social disclosure merely results from managers' attempts to maximize shareholders wealth, by enhancing the public image of the entity. Perks (1993) states that there are four elements of accountability, established by company law: the production of accounting information; the audit of accounting information; the publication of accounting information, and; sanctions. He considers that there are three sanctions: selling shares; expression of dissatisfaction at Annual General Meetings, and; not re-electing the company directors. These elements of accountability could be applied to increasing environmental reporting, where interested parties are shareholders. It is notable that the market, social and political motives discussed above all hinge on companies disclosing environmentally as a result of accountability, whether to the financial community, and/or society.<sup>32</sup>

*An Environmental Ethos:* By combining the four theoretical motives discussed above, a reality may be created and termed, "the environmental ethos".<sup>33</sup> The environmental ethos suggests that society is becoming more aware of environmental issues, and this is reflected in corporations being held accountable for their stewardship of the environment. Decisions as to how well a company has undertaken this stewardship, can only be made by disclosure of useful information. In turn, a formalised set of guidelines

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<sup>32</sup> The free markets perspective could be seen as not bearing any relation to accountability. However, if the "environmental ethos" is established within a free markets environment, then accountability comes into play.

<sup>33</sup> The term "environmental ethos" is used throughout this thesis, in relation to society's increasing awareness of environmental issues, and was defined in chapter one.

is needed to achieve this, such as a conceptual framework. The suggestion is that companies voluntarily disclose environmental information for a variety of reasons, with speculation that it is more as a result of accountability, to society, than to the financial community. Yet, everyone does not share the reality of this "environmental ethos". Indeed, the critical accounting school suggests that voluntary corporate environmental disclosure represents nothing but crumbs from the capitalists' table, arguing that environmental disclosure is used to pacify the population. Central to their argument is the "big stick", in the context that accounting supports a market-based economy, which creates (or is a product of) a reality that supports the *status quo*. The critical school is represented in Tinker, Merino and Neimark (1982), Merino and Neimark (1982), Lehman (1983 and 1988) and Tinker (1985). Mathews (1993) surveys the literature in this area and provides a synthesis of their views. The critical school considers nothing can be gained from encouraging corporate social reporting, as it represents participation in a system which they consider defective.

The environmental ethos, introduced in chapter one, represents the middle ground of Gray *et al.* (1987a). It is the *status quo*, with no ambition to replace the capitalist system (see Tinker *et al.*, 1991, for a critique of the middle ground). The current thesis adopts the stance of building on the *status quo*, developing a conceptual framework which falls within existing institutional systems and structures.

In summary, four theoretical motivations for voluntary corporate environmental disclosure have been discussed, with the conclusion that they may be combined to form an environmental ethos, which supports, and is upheld by, the *status quo*. The evolution of the environmental ethos may have led to corporate environmental reporting. The

corporate environmental reporting framework is currently implicit, in that there has been little investigation into how it is formulated. There is little empirical evidence to indicate whose reality is being reported (*i.e.* who has the "bigger stick" - even though it seems that the companies hold the "bigger stick", as discussed earlier), and this, therefore, begs investigation. One way of transforming this implicit reality into an explicit reality, is by the adoption of a conceptual framework approach (as discussed in Macve, 1981).

## **(ii) The Usefulness of Corporate Environmental Disclosure**

Given the above discussion about the motives for corporate environmental disclosure, it seems appropriate to consider how useful such information actually is. Indeed, one of the most important issues in corporate environmental reporting centres around the usefulness of the information disclosed. The wish lists in sections 3.3.2 and 3.3.3 considered the items disclosed. Other issues related to the usefulness of corporate environmental disclosure include forms of disclosure and disclosure bases.

Corporate environmental disclosure can take three forms, financial, quantitative and qualitative. Welford and Gouldson (1993, page 69) emphasise the importance of using different bases for disclosure :

"There are many different measures which may be adopted by the firm. The choice will depend in part on measurability but consideration of how the measures are to be used and communicated will also be fundamental".

The European Federation of Financial Analysts' framework places a substantial emphasis on financial disclosure (see White, 1996, for the use being made of such information, and The Economist, September, 1994b). The United Nation's survey (UNEP, 1996b), on stakeholder needs, suggests that companies disclose information, specifically on

environmental expenditure, and investment on a financial basis. For example, the recent increases in environmental legislation (in the form of the 1995 Finance Act) have internalised some environmental externalities. These changes included the introduction of the Landfill Tax and the Environment Act 1995, giving Local Authorities power to serve remediation notices to owners of contaminated land.

A proportion of corporate environmental disclosure is made on a quantifiable basis (see *The Economist*, December, 1994, for a discussion of contingent valuation). Disclosure of environmental information on a quantitative basis is seen as the primary reporting medium by the Ceres Report (CERES, 1992). The stakeholder investigation by the United Nations also indicated that quantification is required (UNEP, 1996b), and the European Federation of Financial Analysts would also welcome quantitative disclosure (EFFAS, 1994). An agenda directed towards sustainable development would need corporate disclosure of raw materials used, as well as energy, and water, in producing finished goods (see ENDS Report, August 1996). Energy consumption is a staple diet for all commercial activities. The tendency is to report these in terms of quantitative disclosure. However, the majority of corporate environmental disclosure is still on a qualitative basis (see Adams *et al.*, 1995, and; KPMG, 1996).

There are several bases on which information may be disclosed. There is the traditional historic base which summarises past performance. This is the base which is most commonly used and advocated. Another base is management information. In relation to the disclosure of management information, the information that management needs for its decision-making purposes often preempts voluntary disclosure. For internal decision making, management uses information which tends to be based on current costs and

judgement. As company management does not disclose all information there is a principal agent problem of informational asymmetry, in this case between the agents, corporate management and the principals, their stakeholders. Gray *et al.* (1993) and Hoffman (1996) for example, suggest that companies often shadow impending environmental standards and the process of disclosing to the public, in order to anticipate the legal framework and markets. Eventually, when they are confident, they may disclose some information. For example, a company may publicly state that it holds some contaminated land. However, there is probably a time lag of between 18 months and two years from the decision to test land, organise tests and consultations etc., and the arrival at an estimate of the level of contamination. This may result in information asymmetry. Management type information is characterised by being less reliable yet more relevant than historically based disclosure.

The historic base is particularly useful when it is used to benchmark a company's performance. In theory, benchmarks are one of the most useful ways of assessing corporate environmental performance. Popular benchmarks include legal compliance; industry average, and sustainable development. Benchmarking is very similar to ratio and trend analysis and as such, it is an accepted form of analysis.

### **(iii) Assessing and Reporting Environmental Incidents**

Although corporate environmental information may be considered useful at all times, in the event of an environmental incident, the assessing and reporting of the incident becomes particularly relevant. Environmental incidents may range from major disasters, to complaints about the noise of road works. A company's commitment to openly

disclose information, following its involvement in an environmental incident, exemplifies the concept of corporate accountability. Major environmental incidents such as the Exxon Valdez disaster have created a demand for timely, relevant and reliable disclosure. The assessment and reporting of environmental incidents are central to the Ceres Principles. The Principle on informing the public (CERES, 1992) states :

"We will inform in a timely manner everyone who may be affected by conditions caused by our company that might endanger health, safety or the environment...we will not take any action against employees for reporting dangerous incidents or conditions to management or to appropriate authorities".

In practice, this can be seen in the Body Shop Ceres Report (Body Shop International, 1995, page 28) :

"Our environmental policy requires all significant spills to be reported. Significance is assured with respect to both nature and quantity of material".

The United Nations (see UNEP, 1994 and 1996b) suggests that companies assess and report all environmental incidents. The European Federation of Financial Analysts (EFFAS, 1994) makes no reference to assessment and/or reporting of environmental incidents. Also, the IBM/ECOTEC framework (IBM, 1995) does not include a specific category for the consideration of environmental assessment and reporting of incidents. This may be because information technology is a low environmental risk industry. It is notable that the assessment and reporting of environmental incidents are not fully addressed in the voluntary codes of conduct discussed in sections 3.3.2 and 3.3.3. This is perhaps due to their sensitive nature.

#### **(iv) The Time Period and Communication of Corporate Environmental Reporting**

To be useful, voluntary corporate environmental reporting must be both timely and communicated *via* an appropriate instrument. The frequency of disclosure by companies



of financial information was set on an annual basis by the 1948 Companies' Act (see Underdown and Taylor, 1985, and Elliott and Elliott, 1997). The legal rights of shareholders and creditors to corporate financial information are discussed by Mayson, French and Ryan (1995) with reference to the Companies' Act 1985 s. 224(5). Companies listed on the International Stock Exchange have to adhere to the exchange listing agreement. This agreement requires the disclosure of annual and interim financial information and public announcements on share price sensitive information, (see Arnold, Hope, Southworth and Kirkham, 1994, and Elliott and Elliott, 1997). The legal requirements for financial disclosure are summarised by Mayson *et al.* (1995, page 104), as follows:

"The benefits of separate corporate personality and limited liability can only be obtained in return for a certain loss of privacy. Disclosure and publicity have been a feature of company law since 1844, though their nature and extent have varied considerably since then. Disclosure is now secured in one or more of four ways: by delivery of information to the registrar of companies; by publication in the *Gazette*; by registers and information available at the company's registered office; and by publication in business documentation".

The situation for corporate environmental reporting is very different. The Environmental Protection Act (1990), the Environmental Information Regulations Act (1992) and the Environment Act (1995) have all facilitated the availability of corporate environmental information to interested parties, through the provision of registers and increased ease of access (see Ball and Bell, 1995). However, interested parties have to initiate any enquiry. This fundamentally differs from the principles of the Companies' Acts for financial reporting. In the Companies' Acts, financial reporting must be made widely available to stakeholders (see Elliott and Elliott, 1997). Current communication vehicles environmental reporting practice includes the annual report, separate environmental report, usually annual, and the use of the media for any interim reporting (see Zéghal and Ahmed, 1990; Roberts, 1992a, and; Mathews, 1993).

Companies such as Thorn EMI (1993 - 1995), Body Shop (1992 - 1996), Shell UK Ltd. (1993 - 1995), British Telecom (1992 - 1995), and British Gas (1993 - 1995) have produced a separate annual environmental report for several years. These are, however, the exceptions, with most companies still not reporting any environmental information. Both Gray (1990), and Macve and Carey (1992) discuss environmental disclosure within the context of the financial accounting framework and in a non-financial framework. This indicates the importance of different types of reporting. Companies which produce an annual stand alone environmental report also, to a lesser extent, disclose environmental information in their annual reports to shareholders (see KPMG, 1996, and Gray *et al.*, 1987a, and 1996a, for evidence of this practice). Some companies disclose environmental information in their annual report (see section 3.3.1).

The World Industry Council for the Environment Managers' Guide (WICE, 1994, page 7) suggests that:

"Large quantities of data can dilute an otherwise potent piece of information. Each enterprise should evaluate when less information is more meaningful and when a simple, infrequent disclosure is irrelevant or unhelpful. Experience is mixed. Some enterprises publish a general environmental report every year, others only every two or three years, communicating in other ways in the intervening period" .

"Introducing environmental reporting" (CBI, 1994) recommends that corporate environmental reporting should be on an annual basis and, if necessary, in the intervening period. The Coalition for Environmentally Friendly Economies (Ceres, 1992) promotes the annual completion of the "CERES Report". This is a self-evaluation of the company's progress in implementing the Ceres Principles. "The International Chamber of Commerce Business Charter" (ICC, 1991), recommends regular and periodic reporting. The "Coming Clean" report (DTTI, 1993), recommends corporate

environmental disclosure on an annual basis. This is seen as stage four in a five stage process for corporations to disclose environmental information. "Reporting on environmental performance" (CICA, 1994), recommends environmental disclosure in the annual report to shareholders and a separate environmental performance report when the company deems this necessary. "Company Environmental Reporting" (UNEP, 1994) recommends that companies should formulate and disclose a reporting policy for environmental disclosure. Examples are cited such as British Telecom which has made an explicit pledge to produce an annual environmental publication. The United Nations' (UNEP, 1996a) suggestion of combining environmental reporting with financial reporting, and mandatory disclosure, implies a one year time frame, with either incorporation in the annual report, or production of a separate annual environmental report. The European Federation of Financial Analysts (EFFAS, 1994, page 8) in their framework suggests that :

"The required information can be discussed in the form of notes in the annual report or in a special annual environmental report".

This implies a one year time period, which is sensible, given this stakeholder group's specialist needs. The approach, adopted by IBM (1995), is the production of a separate environmental report published every two years, or at their own discretion. In summary, it seems that the consensus of opinion and practice tends towards reporting environmentally on an annual basis. Those recommendations or cases of disclosure on any basis less frequent than annual tend to be from an industry, or producer perspective

There have been several recent innovations in approaches to communicating environmental disclosure. For example, the Internet (see UNEP 1996a) provides a vehicle for disclosure but the existing format is much the same as a printed report, as

is disclosure which is available on computer disk. New experimental communication vehicles are appearing all the time, such as videos (see EAAR, November, 1996a).

#### **(v) The Users of Corporate Environmental Disclosure**

The usefulness of information is relative to the final user groups, therefore it seems appropriate that there is an investigation into who the users of corporate environmental disclosure may be. Thus, a fundamental issue in corporate environmental reporting is the identification of the users.<sup>34</sup> Possible users of environmental disclosure will be discussed in terms of two frames of reference, financial and corporate social reporting. The financial frame of reference for users could have been initiated by the Companies' Act 1844, which emphasised the importance of creditors and the balance sheet. The 1929 Companies' Act marked a shift towards the shareholder with the introduction of the profit and loss account, but at this stage there was no compulsory financial audit. With the 1948 Companies' Act the shift towards the shareholder as the perceived main user was complete, with the introduction of the audit of financial statements and minimal levels of disclosure. The shareholders' *prima facie* position has since been strengthened with subsequent Companies' Acts (see Underdown and Taylor, 1985, Parkinson, 1993, Perks, 1993, and Mayson *et al.*, 1995). The Corporate Report (ASSC, 1975 page 17) identified seven broad user groups who have:

"... a reasonable right to information and whose information needs should be recognised by corporate reports..." .

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<sup>34</sup> The term "users" in this part of the research refers to stakeholders who require disclosure for purposes of accountability, and economic decision usefulness.

This formally began the process of considering that there are users of accounting information other than shareholders. Table 2.2 lists users identified in financial reporting conceptual frameworks. Only in the Corporate Report are all the user groups attributed equal priority. The other frameworks generally identify present and potential investors as a priority grouping. It is interesting to note that all of these frameworks identify the public as a user group.

The importance of the diversity of users is shown by the United Nations (UNEP, 1994 and UNEP 1996a), where the users become an integral part of the framework. In the United Nations research on users (UNEP, 1996b), 12 case studies were compiled to express users' views towards company environmental reporting. The case studies were divided as follows:

**The Market Users :**

1. Danish Environmental Protection Agency - regulator
2. HRH The Prince of Wales' Royal Warrant Review Group - customer
3. Rating Agencies - financial community/investors (the case study is based on the combined perspective of three selected environmental rating agencies, the Swiss Eco-Rating International, the US Investor Responsibility Research Center, and the German ökom).
4. Stock Exchange of Thailand - financial community/investors
5. Sustainable Asset Management - financial community/investors
6. UNI Storebrand - financial community/investors/insurers
7. VROM - regulator (Netherlands Ministry of Housing, Spatial Planning and the Environment)

**The Citizens' Groups :**

8. Aviation Environment Federation - environmental campaigners
9. Ceres - environmental campaigners/shareholders/local communities
10. Centre for Social and Environmental Accounting Research - education
11. Greenpeace - environmental campaigners
12. New Economics Foundation - stakeholders

The "Tomorrow's Company" report (RSA, 1995) considers the importance of society to business. It advocates the view that business does not exist in a vacuum, and that in

order for companies to maintain their "license to operate" a more "inclusive" approach to business relations is required - that is, the recognition and consideration of other stakeholders, such as the community. The Tomorrow's Company report identifies eight stakeholder groups. Cannon (1994) identifies seven stakeholder groups and their primary and secondary expectations. Welford and Gouldson (1993) identified six stakeholder influences and government.

The recognition of the community as a stakeholder in companies conforms with the ethos of corporate social reporting, and transparency (see Gray, 1992 and Gray *et al.* 1993). Gray *et al.* (1996a) provide a list of 18 possible audiences for corporate social reporting. The audiences specified are narrower and more specific than the other frames of reference already discussed. "Reporting on environmental performance" (CICA, 1994) concludes that there is a possible audience of seven groups who may be interested in corporate environmental disclosure. Similarly, "Environmental reporting: a manager's guide" (WICE, 1994) identifies an audience of 10 plus specific industry and/or company audiences. "Introducing environmental reporting" (CBI, 1995) has identified six audiences plus any specific industry and/or company audience. The "Coming Clean" report (DTTI, 1993) lists 10 "key shareholder groups and some appropriate forms of communication".

Examples of company management trying to identify their stakeholders include IBM (1995) and Glaxo (EAAR, December 1996/ January 1997). The IBM/ECOTEC approach was to consult a select group of stakeholders (IBM, 1995, page 6) :

"ECOTEC consulted 75 of IBM's stakeholders and asked them to identify the areas in which they wanted to see IBM's performance reported. Stakeholders were selected from the cross-section of individuals potentially affected by and perfecting IBM's environmental activities. These included employees,

customers, suppliers, investors, lenders, insurers, government, organisations and regulators (including the DOE, DTI, HMIP and Clyde River Purification Board), local communities, environmental experts, and opinion formers such as environmental business organisations, academics and journalists".

This demonstrates that there is a general trend towards disclosing to a wider group of stakeholders, rather than only traditional ones.

#### **(vi) Bearing the Cost of Corporate Environmental Reporting**

Although company management is currently providing corporate environmental disclosure free of charge to interested parties, this may not be the optimum or preferred state of affairs. Indeed, an important issue in corporate environmental reporting concerns whether or not the company should absorb the full cost of disclosure. In financial reporting, the company bears the cost of disclosure in return for its standing in law as a separate legal entity. Does it therefore follow that the company should also absorb the cost of environmental disclosure? The costs can be large (see section 3.3.1). For example, the "Coming Clean" report (DTTI, 1993) quotes a cost range for free-standing corporate environmental reports of between US\$ 50,000 and US\$ 200,000 (see also, WICE, 1994, for some of the costs of reporting). The costs involved in the production of environmental disclosure are "material" for both compliance with legislation and for voluntary disclosure (see EPA, 1995). One company which has passed on at least some of the costs to interested parties is Body Shop.<sup>35</sup> The majority of corporate producers of voluntary disclosure pass the information on to the interested party at no cost.

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<sup>35</sup> The Body Shop "box set" of four "Values Reports" (1995) consists of : The Body Shop Annual Environmental Statement 95; The Body Shop Social Statement 95; The Body Shop Animal Protection Statement 95, and; The Body Shop Approach to Ethical Auditing, 95. This "box set" is available from The Body Shop mail order department at a cost of £10 (see EAAR, March, 1996a).

The precedent for financial disclosure at no cost to the end user was established in the Companies' Acts. As the following from Mayson *et al.* (1995, page 242) confirms :

"Any member of a company and any holder of its debentures is entitled to demand a copy of its most recent annual reports free of charge (CA 1985, s. 239(i))".

However, if you are not a member (shareholder) of the company, you may expect to pay for an annual report. However, the tendency is for them to be free<sup>36</sup>. The present situation is that most corporate environmental disclosure is financed by the company concerned. This, according to Perks (1993) means that companies would be unwilling to pay for disclosure which may be detrimental to them. This provides support for Berger and Luckmann's (1991) "big stick" argument, suggesting (Perks, 1993, page 85) that :

"It is not necessarily the best case that wins; it may be the one presented by the most powerful group".

Attempts to change corporate behaviour by groups outside the company (e.g. social audit) by financing and producing corporate reports, have proved difficult, mainly due to difficulties in obtaining verified information (see Gray *et al.*, 1996a).

The Advisory Committee on Business and the Environment (ACBE, 1996a) advocates the use of three instruments for the disclosure of environmental information. These are the annual report, the Operating and Financial Review, and an environmental report (either as a separate section within the annual report, or a stand alone environmental report). There is an implicit assumption here that a separate annual environmental report that is not integrated into the annual report will also be free to interested parties.

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<sup>36</sup> One notable exception to this is the Asda supermarket chain, who charge £3 for their annual report.



A free market approach would suggest that users should pay. However, market factors such as competitive advantage, or public relations, may mitigate payment to a "loss leader" approach. The present situation is that companies bear all the cost of disclosure, which is similar to the "polluter pays" principle. Both central and local government, and their agencies, have no qualms about charging interested parties for environmental information (see ENDS Report, May, 1996). Companies which endorse the Ceres Principles support open environmental reporting and corporate accountability, which would imply that companies should bear the entire cost. The Ceres Report is available from Body Shop, free of charge. IBM's corporate environmental disclosure is also available free of charge, suggesting that at minimum the environmental disclosure which IBM wishes voluntarily to produce, is available at no charge to interested parties.

The European Federation of Financial Analysts (EFFAS, 1994) do not address who should pay for disclosure, however they recommend that disclosure takes the form of notes in the annual report, or a separate annual environmental report. The former would suggest that the cost is borne by the company, and from that it can be suggested that the latter represents the same view. The United Nations discuss "ten transitions" which, they believe, will shape company reporting practice in the future (see UNEP, 1996a). Although reporting costs are not discussed, the ten transitions would suggest that the company should absorb the full cost, especially with the increasing focus on corporate governance and mandatory reporting.

## **(vii) Possible Qualitative Characteristics of Corporate Environmental Disclosure**

Any attempt to investigate similarities between the financial reporting conceptual frameworks and a possible conceptual framework for corporate environmental reporting needs to incorporate a discussion of qualitative characteristics, as they form a prominent part of the financial reporting framework (see section 2.3.1). Qualitative characteristics for decision useful information are quintessential to financial reporting. The Accounting Standards Board, in its statement of principles (ASB, 1995a, page 40, paragraph 2.1) states :

"Qualitative characteristics are the characteristics that make the information provided in financial statements useful to users for assessing the financial position, performance and financial adaptability of an enterprise".

The transition from financial reporting to environmental reporting, with respect to qualitative characteristics, has to some extent been made in the literature (see Macve and Carey, 1992; CICA, 1994; de Sande, 1995; Gray *et al.*, 1987a and; Gray *et al.*, 1996a). There is some doubt that the qualitative characteristics of corporate financial reporting are "good things" (see for example, Macve, 1981, for the alternative point of view, see Solomons, 1989). The question is, are the qualitative characteristics for financial reporting also useful in environmental reporting? The following quote from Lunt (1981, page 128) when discussing the Financial Accounting Standards Board's conceptual framework and qualitative characteristics, helps to clarify the position:

"It [the FASB] recognises that some characteristics are more important than others, and those that are most closely related to the type of information that users want have precedence. Thus there is a link between objectives and the hierarchy of qualitative characteristics. However, this link cannot be forged if there are different users with different information needs. The information required may have a different balance of desirable characteristics for each group. For example, investors may be particularly concerned with comparability and consistency, whereas a creditor timeliness as the most useful characteristic."

Therefore, a conceptual framework for corporate environmental reporting, with the objective of accountability, and economic decision usefulness, may have the same qualitative characteristics as financial reporting but with differing preferences of importance. In other words, corporate environmental reporting may adopt the same qualitative characteristics as financial reporting but may attach differing degrees of importance to each characteristic. In addition to this, the first possible qualitative characteristic for environmental reporting to evolve has been that of transparency (see Gray, 1992 and Gray *et al.*, 1993) thereby further adding another element of "desirability". Interestingly enough, this qualitative characteristic would not go amiss for financial reporting. The European Federation of Financial Analysts (EFFAS, 1994), in their catalogue of requirements for environmental reporting, suggests that the qualitative characteristics of financial information are transferable to environmental information. The views expressed by the United Nations (UNEP, 1994 and 1996a) of a movement towards the integration of environmental and financial reporting would suggest that for this to take place, in a cohesive and comparable way, the qualitative characteristics are appropriate to both types of reporting.

#### **(viii) Recognition and Measurement in Corporate Environmental Reporting**

A major part of any reporting framework is that items are recognised and measured. It is therefore relevant to the current research to consider what is to be measured in corporate environmental reporting, and in terms of the financial reporting conceptual framework these are termed elements. The Accounting Standards Board (ASB, 1995a, page 33, paragraph 3.4) state :

"The inter-relationship between the elements has the consequence that the recognition of one element automatically requires the recognition of another element".

The recognition and measurement of elements is central to conceptual frameworks in financial reporting (see FASB, 1978, 1980, 1984, 1985; IASC, 1989, and; ASB, 1995a discussion in section 2.3), elements representing financial assets and liabilities. However, this analogy need not extend as far as the "Rhine model"<sup>37</sup> approach (see EAAR, August, 1995). The conceptual move may be easily made from financial to environmental reporting, as natural resources may be considered a societal asset, and pollution a societal liability. Therefore, if water, for example, is considered an asset, then discharges to it could be regarded as a liability, or an Environmental Agency consent order could be an asset, and its use, a cost. Many classifications are possible. Establishing the element processes and the flows between them is vital. A good example of this is the 1996 Royal Commission on Environmental Pollution (see ENDS Report, March, 1996a) which contains recommendations on waste disposed to land, landfills and mapping and monitoring of the soil reserve. The Commission has urged the government to give soil as much protection as air and water.

Business Accountancy and the Environment considers recognition and measurement in terms of externalities (Macve and Carey, 1992, page 66):

"Clearly a "natural resource" accounting system would diverge here from conventional accounting as the primary objective would be to measure changes in those resources that are affected by but not directly controlled by the enterprise".

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<sup>37</sup> The Economist (September 1993) identified two original trends in corporate environmental reporting. The Anglo-Saxon model is based on an inventory process. At its core is an environmental policy statement, management systems and an inventory of pollution. This is used mainly by North American and British companies. The Rhine model is based on the "life-cycle" of companies' operations. At its core is the idea of an eco-balance between environmental inputs and outputs. It is mainly used by German and Scandinavian companies. There is some convergence between these, see UNEP (1996a).

The suggestion, therefore, is of a movement away from the current financial reporting framework towards an environmental reporting framework, which encompasses many of the principles of financial reporting. Reporting on environmental performance (CICA, 1994) considers: the consumption of resources; processing, transportation and distribution, and; the use and disposal of the products. The basis of the reporting framework suggested is natural resources and pollution. It is interesting at this point to discuss other examples of these considerations found in the literature. Intrinsic to the Ceres Principles, is protection of the biosphere (CERES, 1992, paragraph 1):

"...eliminating the release of any substance that may cause environmental damage to the air, water, or the earth, or its inhabitants".

Also relevant is sustainable use of (CERES 1992, paragraph 2):

"...natural resources such as water, soils and forest".

Furthermore, "Environmental reporting: a managers' guide" (WICE, 1994) suggests the possible contents for a corporate environmental report, and considers effluents and discharges to air, water and soil (paragraph 10) as well as the use of energy and natural resources (paragraph 11). Another example is the Eco-Management and Auditing Scheme (see EAAR, October 1995 and; May 1996a) which examines the improvement of environmental performance standards, centring around air, land, water, and natural resources. Further, the United Nations (UNEP, 1994 and 1996a) adopts a mixed approach to elements, using a mixture of both the Rhine and Anglo-Saxon models. It attempts to take the best from each model, suggesting disclosure of information on products (life-cycle) and input-output inventory. The Confederation of British Industry (CBI, 1995) considers the use of energy and natural resources. The emphasis is mainly on the measurement of natural resources and pollution. Another perspective, Welford and Gouldson (1993), advocates four measures of environmental performance, namely the

company and its products; direct environmental impacts; infrastructure, and; external relations.

The European Federation of Financial Analysts (EFFAS, 1994) only consider pollution, which is an output from the productive process. There are no requirements for the disclosure of inputs. The Ceres Report (Body Shop, 1995) takes an input/output approach. It is, however, not formalised in terms of the elements proposed. The United Nations' (UNEP, 1996a) approach is very much the same as Ceres. The IBM approach (IBM, 1995) is introvert and examines specific industry problems, with consideration of inputs and outputs. The Environmental Protection Act (1990), part 1, introduces the concept of integrated pollution control. Their reference to controlling releases to all three environmental media, air, land and water is notable. The approach used by Glaxo/ERM (see EAAR, December, 1996/January 1997, page 3) for disclosing environmental information is that :

"Disclosure - should be by environmental media (e.g. air, water, etc), environmental issues (e.g. acid rain) or activity/operation".

Thus, there is some support for disclosure of environmental information on an environmental media basis. This approach represents a synthesis of the views expressed in the literature, and would seem to cover a wide spectrum of user needs.

There are also alternative approaches to recognition and measurement criteria which centre on an actual problem. For example, the European Federation of Analysts' Societies (EFFAS, 1994) considers environmental problems such as global warming, ozone depletion, smog, acidification, neutrification potential, toxicology (both human and eco toxicology) waste problem, biodiversity and others (odour, noise, light). This represents a reactive, rather than proactive, approach to environmental problems. Cowe

(1992) seems to advocate a hybrid approach combining natural elements and environmental problems, suggesting for example: total energy used in heating, lighting and power; total fuel used for transport; total water used; volume of physical waste materials produced, and; volume of waste output discharged into the atmosphere and waterways.

Evidently, no single, "correct", or consensus, approach exists. However, the two basic elements which need to be measured are natural resources (air, land and water) and pollution. These are, metaphorically speaking, assets and liabilities. In accounting, the basic elements have been extensively divided and recategorised to incorporate, for example, assets, liabilities, owners' equity, income, expenses and profit (see FASB, 1985). The Accounting Standards Board (ASB, 1995a) advocates seven elements. Therefore, the elements suggested here are likely to be extended in the future as in the financial accounting framework. As a final example, the Brundtland Report, "Our common future" (WCED, 1987, page 57) states :

"If needs are to be met on a sustainable basis, the Earth's natural resource base must be conserved and enhanced".

This may be interpreted as the recognition and measurement of air, land and water. Focusing on the possible elements of a conceptual framework for corporate environmental reporting, natural resources and pollution constitute recurring themes in the literature (see for example, Owens and Owens, 1991; Bregman and MacKenthum, 1992; Gray *et al.*, 1993; Hardin, 1993, and; Ball and Bell, 1995).

### **(ix) The Verification of Corporate Environmental Disclosure**

Information needs to be credible if it is to be useful to interested parties. One way of making company information more credible is to ensure it is verified. Therefore, should voluntary corporate environmental disclosure be verified,<sup>38</sup> and if so, who are the most appropriate agents for verification? Power (1991) suggests that accountants may not be the most appropriate professional body to undertake environmental audit and verification, as they may not have the appropriate experience, and are subject to pressures from company management. His views are encapsulated in the following quote from Barnes (1985, page 98) :

"...where the demand exists "experts" will appear, conjured into existence by the need for their presence, without, in this respect, what they really know being salient".

Welford and Gouldson (1993) are not of the same opinion as Power, as they suggest that accountants are appropriate agents for verification.

One aspect of the discussion involves accountants as verifiers, in relation to alternative verifiers. The environmental research group of the Institute of Chartered Accountants in England and Wales (Macve and Carey, 1992) maintain that any environmental information disclosed publicly, can be questioned in terms of reliability. The research group suggests (Macve and Carey, 1992, page 89) :

"That reliability can potentially be improved by independent verification or audit".

Verification, according to the research group, is not the sole preserve of financial auditors, but also of multidisciplinary teams, which bring to bear a range of skills. The

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<sup>38</sup> The terms verification, and audit, are used interchangeably and often simultaneously. However, strictly speaking, verification follows audit. The discussion here centres on verification and, in order not to limit the discussion, the term audit is used where it is perceived to precede verification.



financial auditor could hold the position of verifier but draw on environmental specialists for guidance. The Canadian Institute of Chartered Accountants (CICA, 1994) consider verification in terms of third party opinions. They begin by clearly stating that verification is optional and that verification (CICA, 1994, page 72) :

"...sends a strong message to readers that the organisation has made a serious commitment to environmental performance and it is prepared to stand behind the statement it makes publicly".

They further conclude that verification of corporate environmental reporting is consistent with the present role of financial auditors. The environmental task force of the Fédération des Experts Comptables Européens (FEE, 1995) considered verification in terms of financial reporting. They maintained that accountants do have a role to play in financial environmental reporting as part of a multidisciplinary team, as a large number of accounting firms provide environmental audit services to their clients. They consider that environmental verification may become a separate, and new, profession.<sup>39</sup> These professional accounting bodies are of the opinion that verification will add credibility to environmental reporting.

Another area of literature which considers verification can be found in academic accounting. Generally, the academic perspective is that verification of environmental disclosure is a desirable function, which is consistent with the approach of the professional accounting bodies, and the voluntary guidelines discussed above. However, one must be aware of the expectations gap, where society expects more from auditors than they provide in practice (see Perks, 1993, who discusses seven expectations). Gray *et al.* (1987a) when discussing the desirable characteristics of a social report,<sup>40</sup> suggests

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<sup>39</sup> Adams (1992) envisages a new environmental auditing profession that has its roots in the consultancy side of the "big six" accountancy firms.

<sup>40</sup> This also includes environmental reporting.

that it should be audited (see also Owen, 1992, and; Buck, 1992). Adams (1992, page 79) states that :

"It is often argued that corporate environmental disclosure will not be credible to the user unless the data is externally audited".

Perks (1993) provides the basis for assessing the attitudes of the normative group where he states that the existence of a qualified independent body of auditors would add to the credibility of corporate reports (again, the views of the respondents are solicited on this point). He goes on to suggest that financial audit arrangements may be used but that the auditors lack independence and the appropriate expertise to deal with environmental disclosure. An interesting view of the verification process is found in Gray *et al.* (1995, page 88):

"Of course, a report prepared by an organisation and unaudited does not mean it is a pack of lies, any more that {sic} a report prepared by an external party can be assumed to be a full and balanced picture".

A further area of literature which considers verification is the various guidelines and codes available to commerce. The Ceres Principles (CERES, 1992) advocate annual self-evaluation and the timely creation of generally accepted environmental audit procedures. The Confederation of British Industry (CBI, 1995), suggests that independent verification will aid the credibility of an environmental report. The European Federation of Financial Analysts (EFFAS, 1994) also require verification. The United Nations guidelines (UNEP, 1994) include verification as a reporting ingredient. However, probably due to the debate centring around the credibility of financial auditors (see Perks, 1993, and the expectations gap between accounting financial auditing and the public perception of an audit) the same arguments are likely to affect environmental verification (see also EAAR, October, 1995, and March, 1996b). The following from the United Nations (UNEP, 1994, page 36) clarifies their position :

"Do not assume that verification is a guaranteed route to credibility".

However, in the revised United Nations guidelines (UNEP, 1996a), the terminology has moved from "verification as an option" to "verification as standard", with the position presently expressed as (UNEP, 1996a, page 57) :

"The question for companies is not so much whether to have the CER verified - report users are making it clear that this will be expected - but how to ensure that verification really adds value, both for the company and for stakeholders".

The Advisory Committee on Business and the Environment makes the following comment with respect to independent review (ACBE, 1996a, page 43) :

"An authoritative, independent, review of an environmental report can be a major spur to improving the quality, integrity and credibility of its content".

Although the Committee is in favour of encouraging independent verification, it does not wish it to be made mandatory. An interesting point made by the Committee is that verification should continue at a pace which can be met by the availability of suitably qualified verifiers.

Participation in the voluntary European Union's Eco-Management and Audit Scheme (regulation 1836/93, see Ball and Bell, 1995) subjects the participants to independent verification for specific sites only. Verification for the scheme should be made by accredited environmental verifiers (see EAAR, May, 1996a). The verifiers could also be internal to the organisation, provided that they are independent of the business being assessed (see Gilbert, 1993).

The verification issues are still being debated, as witnessed at a recent conference<sup>41</sup> where they were part of the agenda. The panel discussion consisted of two

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<sup>41</sup> The conference was entitled "Developments in Environmental Accounting and Auditing" and was held from 20th to 21st June, 1996 at the Merchant Centre, London, and was organised by IBC UK Conferences Ltd. in association with the Chartered Association of Certified Accountants (ACCA).

environmental verifiers, one from the environmental consultancy division of a "big six" accountancy firm, the other from a prominent independent environmental consultancy. The senior manager of a utility asked the panel whether or not he should choose an environmental consultancy from an accounting firm to verify his company's environmental disclosure in the annual shareholders' report, and the separate environmental report, or whether an independent environmental consultancy should be selected. He considered it more efficient for the company to choose an accountancy firm since the firm could verify across his company, whereas independent environmental verifiers did not have this advantage. This attitude would render independent environmental consultancies redundant, yet the panel remained silent - the only advantage offered by an independent environmental consultancy was its ability to present disclosure in an innovative fashion. Furthermore, auditing was not perceived as sufficient. It was verification which carried the most professional kudos. The notion that the Eco-Management and Audit Scheme may require experts with at least five years' relevant environmental experience was also discussed in terms of there being, initially, a shortage of verifiers (see Buck, 1992, who also raises this point).

In a voluntary framework the only way that stakeholders can mitigate the big stick is by independent verification of disclosure. Verification is very important in financial reporting, so much so that it is compulsory.<sup>42</sup> The survey of current best practice in corporate environmental reporting (see section 3.3.1) revealed that the level of verification varied between companies. Many only had part of their environmental reports verified.

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<sup>42</sup> There is, however, a conflict of interest in financial reporting with respect to the verification of disclosure. This is based on the close relationship between accountants and directors with respect to the consultation services that the former provide to the latter.

## **(x) Interested Party Access to Corporate Environmental Disclosure**

However useful and/or credible corporate environmental disclosure is, interested parties cannot make use of it unless they can have access to it. Consequently, interested party access to corporate environmental reports is also an issue that needs to be addressed, yet there is little literature on this aspect to date. Access to accounting information is dealt with in the Companies' Act 1989. There are four ways in which mandatory disclosure can be made available to the public: firstly, by delivery of information to the registrar of companies; secondly, by publication in the *Gazette*; thirdly, by registers and information available at the company's registered office, and; finally by publication in business documents (see Mayson *et al.*, 1995, for further details). Mandatory corporate environmental disclosure is dealt with in : the EU directive 90/313/EEC on the freedom of access to environmental information; the Environment Protection Act 1990; the Department of the Environment inventory of releases from plants authorised under integrated pollution control; the National Rivers Authority, and; the waste regulation authorities. All of these have resulted in the formulation of registers, some of which can be inspected by the public (see Ball and Bell, 1995).

So far, only mandatory disclosure has been considered. Access to voluntary corporate environmental disclosure is discussed in several of the guidelines and relevant literature. The Chemical Industry Association guidelines entitled "Reporting to your local community" (CIA, 1995) suggests that copies of site reports should be sent to all target audiences. Such marketing of corporate environmental disclosure is endorsed by Welford and Gouldson (1993), Cannon (1994) and Peattie (1995). The Advisory Committee on Business and the Environment guidelines (ACBE, 1996b) emphasises the importance of

the annual report in communicating environmental information. This would seem to restrict access in the first instance to shareholders. Further, the "Tomorrow's Company" report (RSA, 1995) suggests that for a company to succeed, it must communicate with stakeholders. This includes the transmission of environmental information. Also, the Ceres Principles (CERES, 1992) suggest that companies should inform interested parties who may be affected by the activities of the company in the environmental arena. "Environmental reporting, a managers guide" makes the following comment (WICE, 1994, page 7):

"Once produced, a report must be effectively communicated and marketed, both internally and externally, if full benefit is to be gained".

An interesting insight into where city analysts derive their environmental information can be found in "City analysts and the environment" (BIE, 1994). The report indicates that 43% of the analysts never use environmental information and that 24% use the media. To a large degree, the access allowed by companies through voluntary disclosure is a repackaging of available, but inaccessible, information. An example is the floppy disk provided by British Petroleum with its Health, Safety and Environment report (1995) which allows easy access to previously disclosed "environmental performance facts".

The current research revealed the difficulties of obtaining voluntary environmental information from companies. When companies were contacted by telephone to obtain environmental information, one employee from a bank (a leading advocate of environmental disclosure, producing an environmental report) denied all knowledge of such a report and, even after asking colleagues and returning the telephone call, had no knowledge of the report. The literature indicates that such a report does exist. However,

both IBM and Body Shop distribute disclosure from their head office, with little difficulty. The European Federation of Financial Analysts (EFFAS,1994) with their suggestion for disclosure in the annual report, or separate annual environmental report, would imply company head office for the former, as well as the latter. The United Nations' (see UNEP, 1996a) emphasis on mandatory disclosure and integration of financial and environmental reporting would also suggest access from at least corporate head office.

### **(xi) The Objectives of Corporate Environmental Reporting**

The building block of the conceptual framework in financial reporting is the objective of decision usefulness. Therefore, for any investigation of a possible conceptual framework for corporate environmental reporting, the objective or objectives of reporting must be addressed. These are often seen in terms of accountability and decision usefulness. A reason, often cited in the guidelines for corporate disclosure of environmental information, is that it allows companies to maintain their "licence to operate". This abstract terminology refers to a company's acceptance of society's standards. The term encompasses many aspects of accountability. It would seem unlikely that the guidelines would be at ease using the term accountability, as it is not readily compatible with a profit maximisation philosophy. The World Industry Council for the Environment guidelines (WICE, 1994) suggest that environmental reporting may enhance a corporation's reputation by helping to maintain the company's "licence to operate" (see Owen, 1992, and; EAAR, April, 1997). Fundamental to the Ceres Principles is an acceptance by companies of their accountability to society for their use of the environment (CERES, 1992, introduction) which state:

"By adopting these Principles, we publicly affirm our belief that corporations have a responsibility for the environment, and must conduct all aspects of their business as responsible stewards of the environment by operating in a manner that protects the Earth."

The introduction to the PERI guidelines (PERI, 1994) discusses accountability, suggesting that an organisation's environmental performance is increasingly viewed as essential to good citizenship. Specifically, accountability is referred to in the guidelines with respect to the necessary contents of the environmental management structure section of a corporate environmental report. One suggestion is that the section should (PERI, 1994, page 2):

"Summarize the level of organizational accountability for environmental policies and programmes and the environmental management structure".

The introduction to the European Chemical Industry guidelines (CEFIC, 1993) discusses the public's "right-to-know", in relation to the effects industry has on environmental degradation. This concept is again synonymous with corporate environmental accountability (see also, "Coming clean", DTTI, 1993). The Chemical Industry Association states that (CIA, 1995, page 1):

"It is particularly important that we do recognise that those who live and work in the proximity of our manufacturing sites have the right to be given information to enable them to understand what we are doing and how we are improving our performance".

The Chemical Industry Association continues the discussion in terms of the need for disclosure, so that a company can maintain its "licence to operate".

The "licence to operate" theme is also advocated by the "Tomorrow's company" report (RSA, 1995) which suggests that for British companies to be internationally competitive, they have to have an inclusive approach to society. This encompasses accountability, as seen with environmental disclosure, and the "environmental ethos". The Advisory



Committee on Business and the Environment (ACBE, 1996b) discusses corporate self-interest, and good corporate governance, as reasons for companies to produce environmental reports. This again suggests accountability. The Institute of Chartered Accountants in England and Wales suggests that the days of corporate profit maximisation are over and that new corporations are accountable to a wide variety of stakeholders (Macve and Carey, 1992). The Canadian Institute of Chartered Accountants discusses the extension of corporate accountability (CICA, 1994, page 9) :

"Organisations are facing increasing pressure to publicly account for their environmental performance".

The voluntary guidelines, government committee and professional accounting bodies all agree that companies are accountable to society for their use of the environment. For the alternate argument see section 3.4(i) and Benston (1982a).

The discussion now moves on to consider decision usefulness and its relationship to accountability. Decision usefulness is synonymous with financial reporting. The following provides several examples, which attempt to incorporate decision usefulness with environmental disclosure. The Corporate Report (ASSC, 1975) introduces the concept of public accountability, which is an extension of the legal obligation of companies to disclose information (see section 2.3.1). An interesting combination of disclosure is discussed by the European Federation of Financial Analysts (EFFAS, 1994). They discuss the importance of financial analysts using corporate disclosure, based on some of the voluntary guidelines, as discussed above which seem, in turn, to be based on an accountability framework. They then consider the concept of decision usefulness. The analysts see no conflict in using information based on accountability in a framework of decision usefulness, in association with financial, quantitative and qualitative

disclosure (see also ASSC, 1975; Macve and Carey, 1992; CICA, 1994, and ACBE, 1996b). As can be seen, there is a general consensus in the financial community that an accountability and decision useful approach to environmental reporting is compatible.

Most importantly, are the views of Macve (1981, see section 2.2.1) that there is in practice no difference between accountability and decision usefulness. To be held accountable, a decision needs to be taken. Ijiri (1983), however, is of the opinion that there is a distinction between the two.

### **(xii) The Inadequacies of Corporate Environmental Reporting**

Despite all the previous discussion relating to positive aspects of corporate environmental reporting, i.e. how it may be obtained, who should verify it, how useful is it, there is also a negative side to the current situation. The inadequacies of corporate environmental reporting manifest themselves in several ways. Firstly, the quantity of the disclosure is low or non-existent. Secondly, the disclosure that is made is frequently low in quality. Thirdly, there appears to be no impetus from company management to rectify either of these apparent inadequacies. Therefore, it is important to consider reasons underlying these inadequacies. An understanding of the reasons for inadequate disclosure will allow interested parties to direct their actions in positive direction in order to increase disclosure. However, it is difficult to find reliable information on this area as company management, as would be expected, do not openly discuss their perceived inadequacies (an example is cited in section 3.3.1). The discussion therefore focuses on academic sources. Gray *et al.* (1993) provide the following reasons for corporate non-disclosure of environmental information, as follows; the absence of any demand for

information; the absence of a legal requirement; the problem that the cost would outweigh the benefits, and; the possibility that the organisation had never considered it. According to Welford and Gouldson (1993) legislation is the main reason for corporate environmental disclosure. As they state (page 18) :

"For the vast majority of firms, particularly in the small and medium-sized enterprise sector, issues of environmental management are usually manifested through reactive responses to tightening legislation".

Also (page 18) :

"While issues of business efficiency or the drive for competitive advantage are vital components in the development of environmental management in industry, proactive strategic responses to environmental issues are the exception rather than the rule".

The World Industry Council for the Environment (WICE, 1994) advise that there may be good reasons to exclude certain information from the public arena. These include: the possibility of the information costing too much; companies wishing to report may not possess an adequate information system, and; that there may be legal or customer confidentiality issues, or security implications.

Secrecy relating to environmental pollution within industry has been substantial. According to Ball and Bell (1995) secrecy has been endemic to environmental legislation. Many statutes contain specific sections forbidding the disclosure of environmental information. The roots of this can be traced back to the Alkali Act 1863, which had a policy of keeping any information uncovered by the Alkali inspectorate secret, unless publication was demanded by a particular statute, or was permitted by the owner. This reluctance by companies to report sensitive information, such as water pollution or land contamination, is suggested by Ball and Bell as a major factor contributing to non-disclosure of environmental information.

Gray *et al.* (1996a) consider that systematic change in the field of corporate environmental disclosure is only evident from the enactment of new legislation. As there is little new legislation in the area of corporate environmental disclosure, then a *status quo* seems to preside. Further, Parkinson (1993) discusses a view (no longer popular) that profit-sacrificing social responsibility over a sustained period is impossible, on the grounds that it is incompatible with a company's long-term survival. This view rests on the assumption that product markets are highly competitive, and contrasts with Cannon (1994) and Peattie (1995).

The importance of the financial community should not be underestimated. If the financial community has no perceived need for environmental disclosure, then this will hinder, rather than advance, corporate environmental disclosure. In the report entitled "City Analysts and the Environment" (BIE, 1994) and the sixth progress report of the Advisory Committee on Business and the Environment (ACBE, 1996a), the disinterest of the City was revealed. The Institute of Business Ethics (IBE, 1994) suggests that the main reason for companies not addressing environmental issues may be inefficient management, which may be divided into three constituents: firstly, that environmental issues do not apply to the company; secondly, cost, and thirdly; a result of continuing old practices. The report, "Coming Clean" (DTTI, 1993) specifically points out that disclosure of environmental information to competitors may identify the corporations' "Achilles' heels".

Harte and Owen (1992) portray a profound reluctance by the business community to release detailed information into the public domain. Interestingly enough, these companies often support environmental initiatives, such as the International Chamber of

Commerce Business Charter and the Advisory Committee on Business and the Environment, with environmental information only being used for internal purposes. Perks (1993) suggests that the main reason for the inadequacy of corporate social disclosure is its voluntary nature. Without mandatory disclosure, the "big stick" argument applies and companies disclose only what they wish. However, Perks does put forward the notion that if the financial markets were interested in corporate social reports, then more voluntary disclosure would take place and mandatory disclosure would be avoided.

Mathews (1993) examines the assumption that corporate social reporting is desirable, justifiable, and fills a demonstrated need. The case is not conclusive, especially from a markets perspective. Therefore, just as corporate social reporting is desirable, justifiable and fulfils a need, from a normative perspective, an alternative normative response is that it does not. Alternative realities exist. Benston (1982a) considers that it would be irrational for corporations to disclose any information detrimental to them. With respect to social reporting, managers do not have a clear mandate (see section 3.4(i)). Profit maximisation, to Benston, is the only objective of corporations (see for example, Briston and Dobbins, 1978, for an alternative discussion).

The judging panel to the Chartered Association of Certified Accountants' Environmental Reporting Awards scheme for 1996 (see Owen, Gray and Adams, 1997) found several inadequacies in corporate environmental reporting. The major inadequacies included: the lack of serious environmental reporting by small and medium sized enterprises; the lack of benchmarking of environmental performance; the lack of disclosure on the breakdown of capital and revenue spending on environmental issues; sustainability in terms of its social dimensions, such as health and safety and animal testing; the poor design of

environmental reports, and; the lack of stakeholder communication as feedback into the environmental reporting process.

The majority of companies do not disclose environmental information voluntarily. Exceptions to this are, for example, IBM and Body Shop (see section 3.3.1). However, many organisations such as the United Nations (UNEP, 1994, 1996a and 1996b) and the European Federation of Financial Analysts (EFFAS, 1994) promote more disclosure in line with user needs.

Adams *et al.* (1995, page 24) summarises the inadequacies of corporate environmental reporting as follows :

"...the typical company provides purely discursive information, describing only some of its activities in some sectors (often only for domestic operations), it provides no information on external benchmarks or plans and fails to place the information provided in any context. The overall picture therefore is very disappointing".

### **3.5 A Rationale for Developing an Explicit Conceptual Framework for Corporate Environmental Reporting**

This section considers the need for, the potential for and limitations of a conceptual framework in corporate environmental reporting.

### 3.5.1 The Need for an Explicit Conceptual Framework for Corporate Environmental Reporting

As shown in chapter two, there is a variety of reasons for developing a conceptual framework, or conceptual frameworks, in any discipline. The need<sup>43</sup> for developing a conceptual framework for corporate environmental reporting can now be more formally stated in relation to the literature in this chapter.

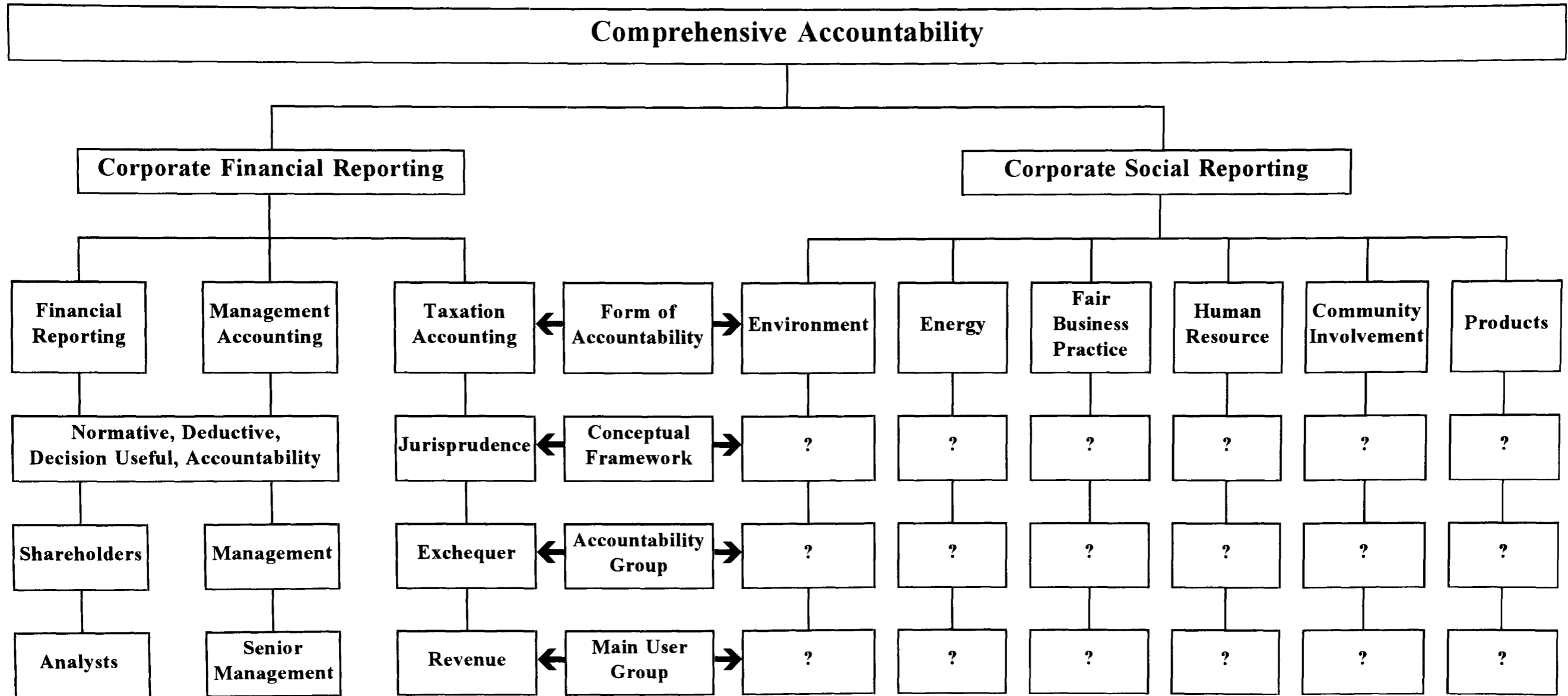
There is a need to develop a comprehensive corporate reporting framework. This involves not only making the corporate environmental reporting framework explicit, but other corporate reporting frameworks explicit. Diagram 3.1 outlines various conceptual frameworks, both explicit and implicit, in terms of comprehensive accountability. The development of a conceptual framework for corporate environmental reporting will allow the environmental reporting process to be made explicit. The main purpose here, is to develop a conceptual framework, which complements the conceptual framework in financial reporting, thereby allowing change in reporting practice for the better, by evolution rather than revolution.<sup>44</sup> This would create a comprehensive accountability framework for both environmental and financial reporting.

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<sup>43</sup> Many of these needs originated from Perks (1993) who discussed them in terms of financial reporting.

<sup>44</sup> Given that it is imperative, at least to some, that there is an increase in corporate environmental disclosure, that is of the quality which allows decision to be made, and satisfies, to some extent, both an accountability and economic objective, setting a framework for environmental reporting, which is complimentary to financial reporting allows environmental disclosure to take place expediently. This is not the perfect solution, but it does allow for immediate action, rather than hoping and wishing for some change in the *status quo*, before the environment is damaged forever.

**Diagram 3.1: Corporate Accountability within Explicit and Implicit Conceptual Frameworks**





The possible existence of market failures (see section 3.4(i) above) may provide strong support for the need for more corporate environmental reporting. A conceptual framework may be used to overcome market failures, by clarifying what the market failures are and then, in turn, helping to rectify the situation.

There is a perceived need, as with financial reporting, for corporate environmental disclosure to be comparable over time, and between companies in the same industry. A conceptual framework for corporate environmental reporting could aid in this endeavour by providing a consistent basis from which all companies could begin to measure and disclose their environmental impact. For example, should environmental disclosure be based on: the medium for environmental threat, such as air, land and water; the identity of the pollutant, such as cars, factories, power stations, etc.; the actual pollutant, such as radiation, lead, pesticides, CFCs, etc; the nature of the target which is being protected, such as humans, animal, the eco-system, the atmosphere, etc, and/or; any combination or other bases. Should the impact be measured in terms of financial, quantitative, or qualitative disclosure, or any combination of these? Each combination, or choice of combinations, on what should be reported and how it should be reported, in effect alters "everyday reality".

Comparability can also be advanced through environmental accounting and reporting standards. A conceptual framework could provide a basis for setting environmental accounting and reporting standards, with emphasis on the treatment of particular items. This would apply to existing accounting standards and to the possible development of environmental reporting standards. For example, should environmental expenditure, which is provided for, be capitalised as an asset, or charged as an expense? (see ASB,

1995a and EAAR, January 1996). Given the considerable scope for "creative accounting" by allowing legitimate choices between accounting treatments, and thereby altering reality, a conceptual framework may at least be able to make transparent the limits of acceptable creativity.

It is important that corporate environmental reporting does not progress in a haphazard manner. The establishment of a conceptual framework would facilitate progress in an orderly way. For example, several companies (such as Thorn-EMI and IBM) have undertaken different approaches to establishing who their stakeholders are, for the purpose of reporting environmentally. These companies have been producing environmental reports for several years. The inference is that they want to report, and have reported, on how their activities affect the environment, but are not clear who their audience is.

A conceptual framework for corporate environmental reporting might eliminate or reduce the need for the development of detailed guidance on how to report on items. A conceptual framework could provide the general principles and legitimate choices of treatment for each item. These would be in terms of what items to disclose, how to disclose them, and on what basis to disclose them. The application of these principles would reflect a reality (see section 3.2).

It is necessary that the "big stick" is shortened, or eliminated, so as to prevent company management from stamping their reality on others. A conceptual framework can allow the development of a reality based on consensus. Also, the prominent position of some

companies in certain industries allows them to set the environmental reporting agenda in that industry, which is most appropriate to them. This practice could also be halted.

There is a need to answer fundamental questions such as why, and for whom, are environmental reports produced? On what principles are they based? What information do the various interested parties want from the companies? How can reports be produced which will meet interested parties' needs? A conceptual framework for corporate environmental reporting could provide the answers.

There is a need for corporate environmental disclosure to be verified. An environmental conceptual framework may add to the credibility of the profession(s) that undertake the verification of the disclosure. This process may in turn lead to the legitimisation of the disclosure and of the profession(s) involved in the verification.

There is a need to develop a conceptual framework for pedagogic purposes, as this allows the development of theories, concepts, and principles, which are essential for academic respectability. If students are to be taught the importance of how different corporate environmental disclosure realities can be created, then a systematic method of disseminating the information is necessary.

### **3.5.2 Potential for an Explicit Conceptual Framework for Corporate Environmental Reporting**

As can be seen from the discussion in the previous section, there is a perceived need for a conceptual framework in corporate environmental reporting. This section addresses the potential for such a conceptual framework.

The literature suggests that presently an implicit conceptual framework in corporate environmental reporting is active. Making the framework explicit does not represent a major paradigm shift as, to a certain extent, corporate environmental reporting is represented within the *status quo*. Therefore, there is a potential for implementing the first stages of a conceptual framework in terms of opening the debate as to what form environmental reporting and the conceptual framework should take.

If environmental reporting were made mandatory, then company management would have to disclose information as required. Under a voluntary framework, management can be more flexible with its disclosure. There is a presumption that avoiding mandatory corporate environmental reporting presents a more suitable paradigm for company management. The development of a conceptual framework could allow company management to report in a systematic way, lessening the need for mandatory disclosure in the area.

The "big stick" is mitigated by the threat of legislation and a company's "license to operate". To maintain their "license to operate", company management may regard a conceptual framework as useful.

The literature considered in sections 3.3.2 and 3.3.3 suggests that company management requires some guidance on how and what to report. A conceptual framework could provide this type of guidance. Recently, at a conference<sup>45</sup> a manager responsible for environmental reporting for a very large UK energy company stated that he wanted to report but it was unclear what he needed to report. He was so frustrated at this that he suggested that one way of achieving this was by government legislation.

It is more advantageous for company management to participate in any agreed structure rather than be an outsider. Management cannot influence any debate without being present. There is therefore, potential for participation in such a project if it were to be marketed properly.

### **3.5.3 Problems with Establishing an Explicit Conceptual Framework for Corporate Environmental Reporting**

A conceptual framework can be developed in any discipline or area within a discipline. However, for it to be useful, there are problems which need to be overcome. Some of the problems that need<sup>46</sup> to be overcome, if a conceptual framework in corporate environmental reporting is to be useful, are now addressed. However, a discussion of how the following limitations, among others, to establishing an explicit conceptual framework for corporate environmental reporting, are considered in chapter ten, so that

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<sup>45</sup> The conference was entitled "Developments in Environmental Accounting and Auditing" and was held from 20th to 21st June, 1996 at the Merchant Centre, London, and was organised by IBC UK Conferences Ltd. in association with the Chartered Association of Certified Accountants (ACCA).

<sup>46</sup> Many of these problems originated from Perks (1993) who discussed them in terms of financial reporting.

they may be seen in the fuller perspective of the model developed and tested in the thesis.

As corporate environmental disclosure is required by a wide range of interested parties for a diversity of purposes, it is likely to be unsatisfactory in some way. For example, the financial community requires financially quantifiable disclosure whereas other stakeholder groups may also require disclosure on a quantitative and qualitative basis.

A conceptual framework needs working definitions. These definitions attempt to create a reality and, as such, are subject to the "big stick" argument. If not subject to this, the reality is likely to be in such general terms as to offer little guidance.

Also, a conceptual framework for corporate environmental reporting, if operational, is more likely to be based on political and economic interests rather than on any principles. Again, the big stick argument applies (see Solomons, 1983). The suggestion is that participation in a voluntary conceptual framework by company management is more likely to represent a cloak of respectability rather than one based on any accountability by companies.

The notion of a conceptual framework suggests some sort of scientific credibility, whereas environmental reporting is more of an art rather than a science - especially if terms such as "a true and fair view" are to become operational as they are relative and subject to change and are therefore not absolute.

A conceptual framework in this area may, to some degree, remove the "professional judgement" of individuals involved in the reporting process. A conceptual framework which is restricted to general principles would require a great deal of expensive professional judgement. Resistance would result from a conceptual framework with clear standards and principles which provide guidance as producers would become mere technicians.

It can be suggested that company directors would resist any conceptual framework which leads to clearer reporting. The "big stick" argument allows the continuation of creative environmental reporting within either a voluntary or regulated framework.

For any conceptual framework to be useful, it needs to be dynamic and respond to change in a relatively short time span, and include these into the framework. This requires not only financial support but also commitment by users. Only time will tell if this problem has been overcome.

As can be seen, there could be a great deal of resistance to the development of a conceptual framework for corporate environmental reporting, as well as many technical problems to overcome. However, benefits of developing a conceptual framework approach seem to outweigh the limitations and there is potential to do so. An attempt to organise environmental reporting in explicit terms, which are common with those of financial reporting, has several major advantages. Firstly, the infrastructure for reporting can be shared between financial and environmental reporting. Secondly, the accounting profession could verify both financial and environmental disclosure thus leading to

potential cost savings.<sup>47</sup> Thirdly, the accounting profession is active in the development of environmental management systems. Fourthly, financial and environmental reporting may share the same users. Furthermore, it is possible that the users of both financial and environmental information require disclosure which is, in principle, decision useful. Lastly, the conceptual framework for financial reporting now represents the *status quo*, and therefore staying within that structure, where possible, may result in less resistance to increased disclosure. There is, at present, a reporting framework which, although not perfect, does provide decision useful information for interested parties. Van de Sande (1995) suggests that as the International Accounting Standards Committee's conceptual framework (IASC, 1989) is seen as "valid", company management should disclose environmental information based on this framework, thereby saving time and money.

### **3.6 Conclusion**

The aim of this chapter was to demonstrate how a conceptual framework may be applied to corporate environmental reporting. Primarily, the discussion focused on the potential for combining corporate financial accountability with social accountability, thereby creating "comprehensive" accountability, based on an economic and accountability decision usefulness approach. The discussion has incorporated a model of reality (based on the "big stick" argument, expounded by Berger and Luckmann, 1991), such that any conceptual framework for environmental reporting must include an "everyday reality". Following this, there was a survey of issues in corporate environmental reporting, relevant to developing a conceptual framework. This was followed by consideration of

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<sup>47</sup> Power (1994) sees this as a potential problem, in terms of professional capture, with accountants auditing for their own gain, rather than what is best for stakeholders.



the need for, potential for, and limitations of developing a conceptual framework, the suggestion being that it is a worthwhile endeavour to pursue. The limitations of a conceptual framework are addressed again in chapter ten, after the empirical testing of the conceptual framework developed in the thesis.

The discussion and critical development of this chapter form the basis for the following chapter, which develops a theoretical model for corporate environmental reporting.

## Chapter Four

### Modelling a Conceptual Framework for Corporate Environmental Reporting

*"I keep six honest serving-men  
(They taught me all I knew);  
Their names are What and Why and When  
And How and Where and Who".*  
Kipling, R. ("Just So Stories", 1902).

#### 4.1 Introduction

The thesis aims to employ a conceptual framework model which fits into the empirical cluster discussed in chapter two. Therefore, following a survey of the relevant literature in chapter three the aim of this chapter is to develop a theoretical model, which forms the basis of the proposed conceptual framework for corporate environmental reporting and which may then be tested empirically in following chapters. This chapter introduces a disclosure component and a reporting component, developed in the thesis from existing literature and theory. These components place the relevant literature and existing empirical research, in the context of a conceptual framework for corporate environmental reporting. The disclosure component illustrates four possible rationales for the voluntary disclosure of environmental information by companies. Accompanying the component is an introductory discussion of the possible reasons why the majority of companies do not disclose environmental information. The reporting component begins by illustrating a reality, for financial reporting, and is developed *via* a series of diagrams. This reality, it is suggested, may have several components, or accountability instruments, as they are referred to throughout the chapter. One *a priori* suggestion is that the accountability instruments are compatible with environmental reporting. The components for both

environmental, and financial reporting, are then illustrated in terms of comprehensive accountability. Together, these two components form the theoretical basis of the current research. The next stage is to use the disclosure and reporting components to identify the research questions, which will be addressed *via* the empirical results from the questionnaire survey. The research questions are placed in the context of the sample groups, which are then surveyed. The two components are then brought together to suggest that a conceptual framework in the voluntary reporting arena, based on the objectives of accountability, and economic decision usefulness, can only be propagated in a corporate environment, which itself advocates accountability.

The layout of the chapter is as follows. Section 4.2 develops the disclosure component, and discusses the forces at work in corporate environmental disclosure. In section 4.3, the reporting component is developed, using an accountability, and economic decision useful approach. Section 4.4 introduces the preliminary corporate environmental reporting research questions. The chapter concludes in section 4.5.

## **4.2 Disclosure Component: An Accountability Approach**

In a voluntary corporate environmental reporting arena, it is important to appreciate, not only why companies disclose environmental information, but also why they do not. This section presents an accountability and economic decision useful component of the theoretical model, which suggests why companies disclose environmental information on a voluntary basis. There is also consideration of the lack of corporate environmental reporting. Lastly, there is a section summary, which discusses the two areas of corporate environmental disclosure, and non-disclosure.

### **4.2.1 Forces Driving Corporate Environmental Disclosure**

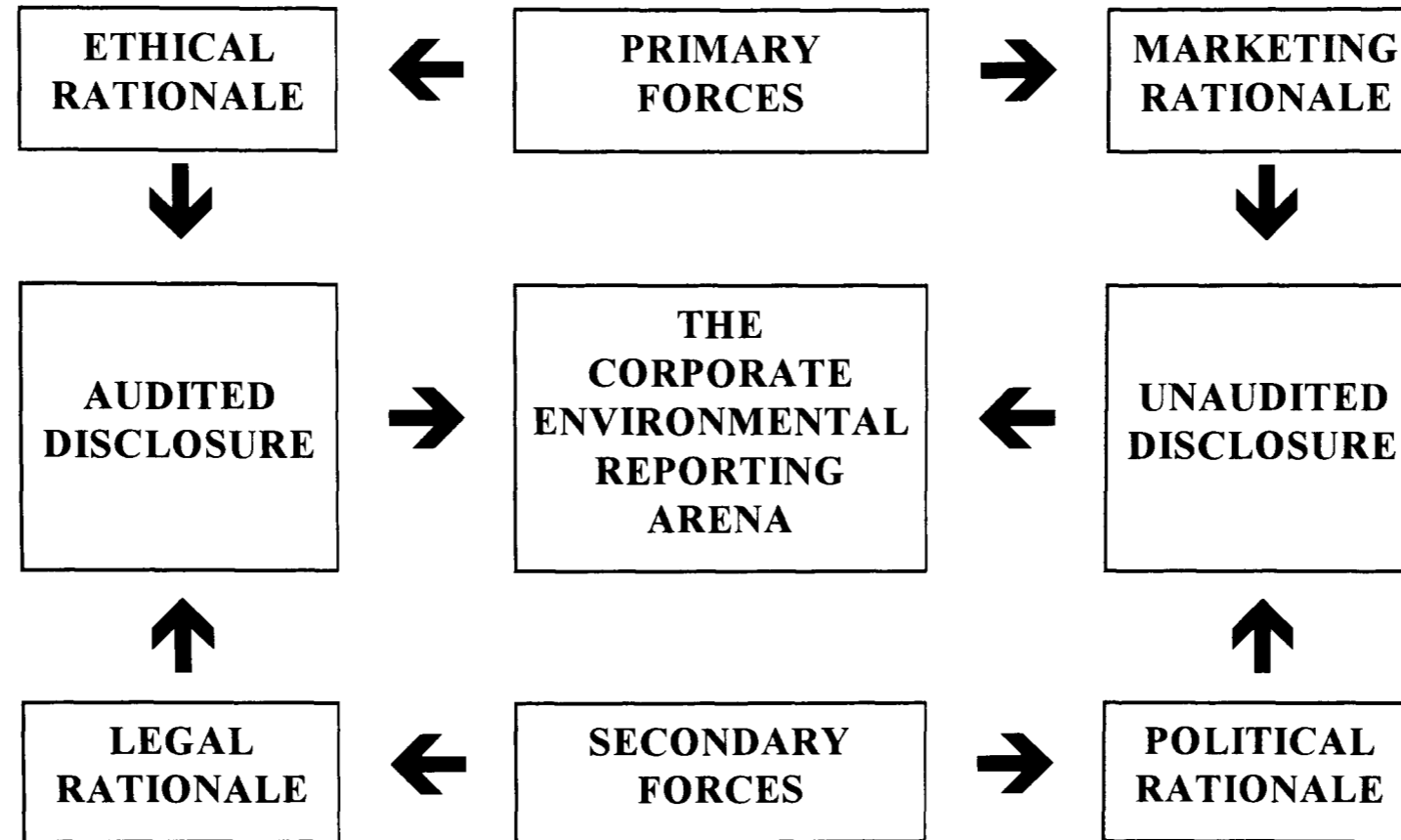
The rationales for disclosure, constitutes the foundations for any proposed conceptual framework for corporate environmental reporting. The component presented in diagram 4.1 considers four possible rationales for corporate environmental disclosure: the ethical, marketing, legal, and political rationales. The rationales are arbitrary, but represent a starting point for discussing corporate environmental disclosure.

An important distinction in the disclosure component is between audited, and unaudited disclosure, in relation to the suggested primary and secondary forces. Diagram 4.1 suggests that audited disclosure, in terms of the ethical, and legal rationales, results from accountability. However, unaudited disclosure, in terms of the marketing, and political rationales, implies that voluntary corporate disclosure is primarily motivated by other reasons, such as the marketing of the company, or of its products.

Diagram 4.1 also illustrates the possible inter-relationship between the rationales - primary and secondary, audited and unaudited - with the arrows converging on the corporate environmental reporting arena (the arrows, in this diagram, represent linkages between the forces involved in voluntary corporate environmental disclosure). This reveals the mixture of voluntary environmental disclosure available to interested parties.

The discussion of the disclosure component continues with a more detailed examination of the four suggested forces, at work in corporate environmental disclosure.

**Diagram 4.1:**  
**Disclosure Component: Some of the Forces at work in Corporate Environmental Disclosure**



## **(i) Ethical Rationale**

As can be seen from diagram 4.1, the ethical rationale is classified as a primary force, in conjunction with audited disclosure. Disclosure, by corporations, of any environmental information, resulting from ethical considerations, represents a major step forward. A view advocated by the Institute of Directors (IOD), which represents approximately 3,500 quoted, and one million private companies, is (Buck, 1992, page 38) :

"The IOD's philosophy is that private ownership of resources gives not only the right to their use, but also the responsibilities for their stewardship. In this way regulation and self-regulation can be made synergistic".

In the same context, but from an accounting perspective, is the view that companies should be reporting environmentally, due to their obligations to society (this can be seen in Gray, 1992). Evidence of such disclosure is the strongest indication that corporations, themselves, believe they are accountable to society. For example, Cannon (1994, page 57) states :

"Ethical issues pervade business life".

Further :

"In recent years, the stewardship of Private and Public assets has been at the centre of the policy debate on corporate values".

For Cannon, as for Dobson (1990), Gray (1992), Owen (1992), Matthews (1993), Perks (1993), and Young (1993), it is ethically correct that companies disclose information, on their stewardship of the environment. They also consider that companies do not disclose solely for ethical reasons. Therefore, clarification is necessary. If companies are disclosing environmental information on ethical grounds, this implies that some form of accountability underlies the disclosure. The important issue is, not only investigating why company management is disclosing environmental information, but also, why the interested parties, and normative, groups believe that company management is disclosing

such information. The ethical rationale centres on corporate management believing that they are accountable to society for their stewardship of the environment. This accountability can be discharged by disclosure of environmental information.

## **(ii) Marketing Rationale**

Marketing is a primary reason often cited for environmental disclosure by corporations. This is illustrated in diagram 4.1 as a primary force, which results in unaudited disclosure. There are, in fact, two dimensions to environmental marketing communication. The first involves disclosure concerning company products and perhaps, socio-environmental implications. Peattie (1995, page 216) states :

"The implications of the green challenge for a company's marketing communications strategy will reflect the actual and perceived eco-performance of the company, its products and the industry to which it belongs. For companies with a strong eco-performance, there is clearly an opportunity to gain competitive advantage by communicating this to the market-place. For those whose environmental performance is poor, or poorly perceived, the communications challenge will centre around damage limitation and clarification together with accurate and rapid communication of any improvement".

Disclosure of this type may, in fact, result from information for regulators which has been audited (see legal rationale below). The second dimension is the integration of disclosure into promotional strategies. Peattie (1995, page 230) states :

"Although it is tempting to believe that if a company builds a greener mousetrap, the world will beat a path to its door, it is not true. Any product needs to be promoted to ensure that consumers are aware of it, understand it and view it as a potential solution to an actual or potential need or want".

There is no doubt that many companies generally believe that they are marketing a green product. However, many companies have marketed products which, they suggested, were green, but in fact, were not. Examples include AEG, which claimed its dishwashers saved fish, Tesco, which advertised itself as the "Green Grocer", and Procter and

Gamble's "Arial Ultra", which, it claimed, "washed greener" (see Collier, 1995). Forces at work, trying to "level the playing field" in this area, are the "Friends of the Earth Green Con Awards", discussed in Collier, who (1995, page 112) states :

"Eastern Electricity was the winner of this award in 1990 with its letter, sent to more than more than 1000 of its customers, urging them to use more electricity as a way of combatting global warming. The company claimed that using electricity instead of burning fossil fuels such as gas, coal or oil in the home would produce less carbon dioxide, the most important of the so-called greenhouse gases. Friends of the Earth pointed out in the citation accompanying the award that most power stations give out carbon dioxide in producing electricity!".

The market rationale suggests that companies disclose environmental information primarily to sell the company, or its products. This is not the issue: the issue is, in fact, that much of this disclosure is unaudited, and therefore lacks credibility. This, in turn, suggests that the disclosure is not primarily for accountability purposes, but is being used for promotional purposes (see Owen, 1992).

### **(iii) Legal Rationale**

As can be seen from diagram 4.1, the legal rationale is classified as an audited secondary force. The legal rationale in a voluntary framework would at first seem an oxymoron. However, the interpretation is a recycling of information, already available. For example, the Environment Act 1990, introduced a series of company pollution registers, to which the public have access (see Ball and Bell, 1995). Information from these registers is more publicly disclosed by companies in, for example, the annual report and, if there is one, the companies' annual environmental report. Other examples include environmental fines and negotiated settlements, and due diligence audits. A



further area which represents a quasi-legal rationale includes, for example, compliance with industry standards.

Central to the notion of a legal rationale is that information, which must be disclosed to regulators, and which is available to the public (but not necessarily easily accessible to them) is repackaged by companies, and re-disclosed. The suggestion is that such information would either be information beneficial to the company or, where the information is detrimental, the disclosure represents a form of damage limitation.

#### **(iv) Political Rationale**

The political rationale is illustrated in diagram 4.1, as an unaudited secondary force. The political rationale rests on the attempts, by companies, to maintain a self-regulatory framework for corporate environmental reporting. Self-regulation is maintained by the use of political lobbying, which is used by large and powerful companies, to influence legislators in order for companies to continue their environmentally detrimental practices, and/or to delay, or stop, the rate of environmental legislation, which may increase mandatory disclosure. Interestingly, lobbying is also used by companies which have invested in green technology, in order to speed up and increase environmental legislation, thereby creating a competitive advantage (see *The Economist*, June, 1995).

The Confederation of British Industry's (CBI, 1995, page 4) Environmental Business Forum (EBF) advocates the following approach :

"Reporting...is a requirement of the EBF - helping to demonstrate businesses' collective commitment to sound management and gain a better political climate for the development of environmental legislation, leading to a sensible mix of regulation and voluntary action, based on a well-informed market".

Central to the political rationale is that companies wish to maintain an environment of self-regulation, rather than be confronted by regulation. In order to maintain a self-regulatory environment, companies balance accepting more accountability for their actions, with increased legislation. By lobbying politicians, companies can delay their accountability to society. However, too little accountability may lead to legislation.

#### **4.2.2 The Inadequacy of Corporate Environmental Disclosure**

The component discussed in diagram 4.1, although representing a reality for the forces at work in corporate environmental reporting, only represents a small proportion of companies, as the majority still do not disclose environmental information (see, for example, Gray *et al.*, 1996a, and Harte and Owen, 1991). For environmentalists, it is important that corporate environmental disclosure increases, in the first instance, so that the effect that economic activity has on the planet, or local community, can be assessed. Although no formal model is presented here, the current research enquires asks the respondents why more companies do not report environmentally. Suggestions as to why companies disclose inadequately were dealt with in section 3.4(xii).

#### **4.2.3 Summary**

The disclosure component considers four rationales for corporate environmental reporting, with suggestions of how they may interact in the environmental reporting arena. The disclosure component attempts to disentangle the underlying reasons explaining why companies disclose environmental information. The investigation into a conceptual framework needs to ascertain how much, if any, of the disclosure is based

on a perceived accountability by corporate management, for their use of the environment. Without evidence of a shift in corporate management's attitudes towards the environment, the disclosure is only likely to be for marketing, and public relations purposes. It is notable that companies disclose environmental information for a combination of reasons. If companies are disclosing as a result of some perceived accountability, as well as for other reasons, such as marketing the companies' products, then this is enough to establish a link. Included in this section is also a brief discussion as to why the majority of companies do not disclose environmental information - an area which has not been greatly investigated as companies resist such prodding.

Having presented a disclosure component based on accountability, the next stage is to present the reporting component, which will be based on an accountability decision useful approach.<sup>1</sup>

### **4.3 Reporting Component: An Accountability and Economic Decision Useful Approach**

In this section, a conceptual framework for corporate environmental reporting will be developed, with the objective of accountability, and economic decision usefulness. The discussion begins by illustrating a reality for corporate financial reporting, divided into five broad reality areas, based on the conceptual framework currently advocated by the Accounting Standards Board in the UK (see ASB, 1995a). This framework is then applied to corporate environmental reporting, with an example. The final development

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<sup>1</sup> Disclosure of information is inextricably linked to the way in which it is reported. Therefore, it is not only important to consider what? is disclosed, and why?, but also, how? it is disclosed. Reporting represents the image of reality created by disclosure.

of the reporting component involves illustrating how the two frameworks may interact. The section is then summarised.

### **4.3.1 Corporate Financial Reporting: The Conceptual Framework**

This section uses the theoretical rationale, developed in chapter two, to illustrate a reality for corporate financial reporting. The reporting component for corporate financial reporting (diagram 4.2) depicts five novel areas, which may represent reality in financial accountability.<sup>2</sup> These are: the foundation of the image of reality, the current image of reality, the conceptual framework, stewardship, and decision-making. Also illustrated, is how they may be inter-related. Beginning with financial accountability in diagram 4.2, a white arrow<sup>3</sup> depicts connection between financial accountability, and the foundation of the image of reality, which is financial in nature.

#### **(i) Foundation of the Image of Reality**

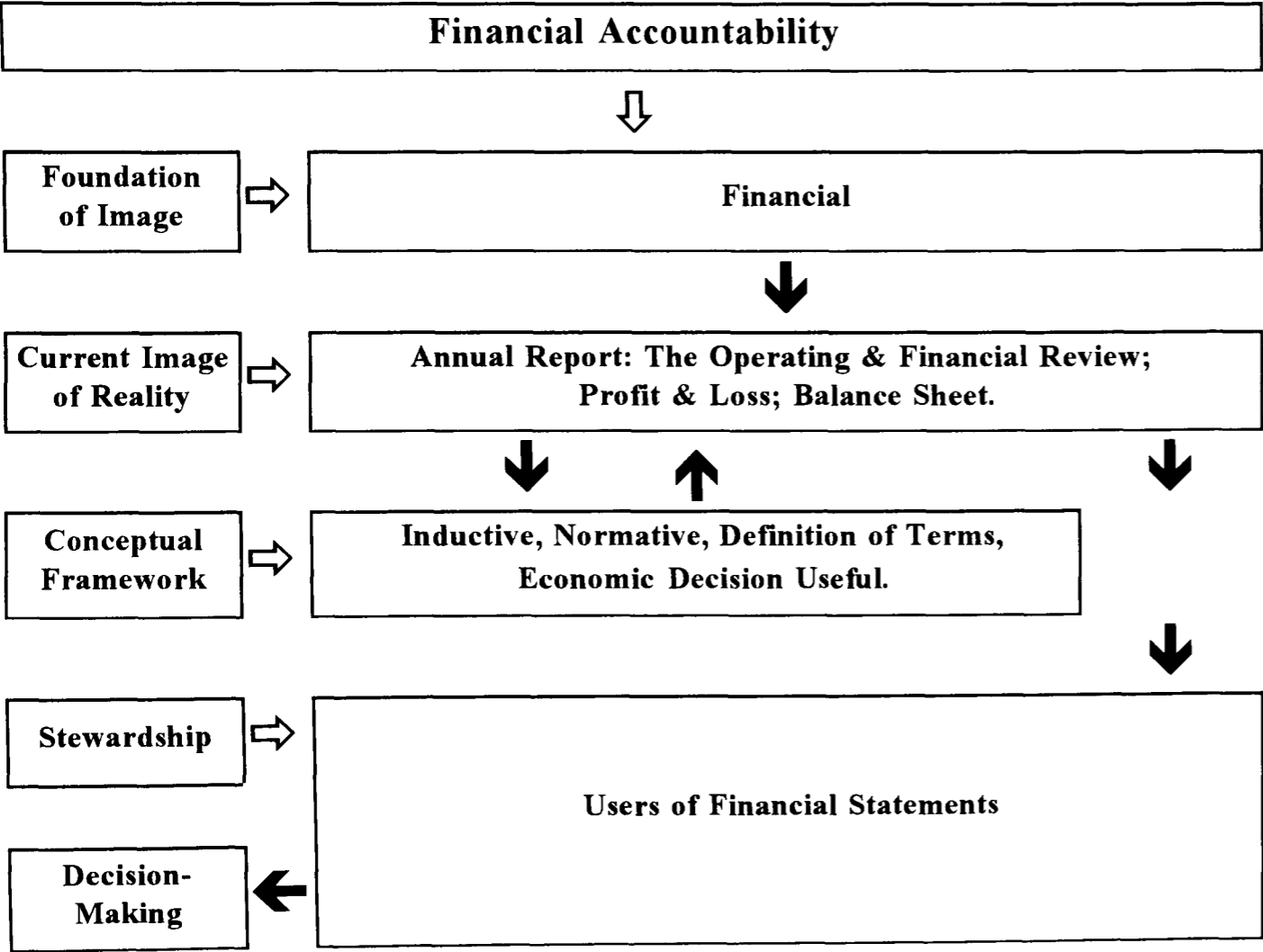
In financial reporting, the foundation of the image of reality is "financial" (see diagram 4.2). Historically, money has been used as the medium of exchange in western cultures and as such has ingrained itself into the law, commerce and accounting. As a result, it has the respectability and acceptability of society. This has manifested itself in the form of "financially quantifiable" images, as the main foundation for depicting reality for corporate financial accountability. The use of money, as the basis for depicting an image

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<sup>2</sup> Much of this is based on my personal interpretation and adaptation of Hines' (1988, 1989, 1991, 1992), Perks (1993), and Ijiri (1983).

<sup>3</sup> It is important to note at this point that in diagrams 4.2, 3.3, and 4.5, white arrows are used to depict components of accountability. The black arrows represent the flows of information resulting from the interrelationship of these components.

**Diagram 4.2:**  
**Reporting Component: Corporate Financial Reporting - An Accountability Framework**



of reality, does give a strong illusion of objectivity. However, recent developments in financial reporting are moving away from this restrictive image, with some financial disclosure, enhanced with the use of narrative discussion (see ASB, 1995a, paragraph 6.51). Diagram 4.2 depicts "financial", as the foundation of the image of reality. An arrow then transmits this financial image to the current image of reality.

## **(ii) Current Image of Reality**

The current image of reality, for the purposes of this study, in financial reporting can be seen in the content of the annual report, in terms of the Operating and Financial Review, the Profit and Loss Account, and the Balance Sheet. This image of reality has been established through the various Companies Acts and accounting standards. The image has developed over time and inadequacies have been dealt with as they have appeared. Today, it is the task of the Accounting Standards Board to deal with any inadequacies in financial reporting. The introduction in recent years of the Operating and Financial Review has greatly expanded the narrow reporting base of corporate disclosure. As will be seen in chapter seven, the Operating and Financial Review provides a communication instrument for corporate environmental disclosure.

The annual report, as a vehicle for discharging corporate financial accountability is an accepted and "understood" image of reality (see section 3.2.2). Diagram 4.2 further illustrates the relationship between the current image of reality, the conceptual framework, stewardship, and decision-making.

### **(iii) Conceptual Framework**

The conceptual framework in diagram 4.2 incorporates the following proposed characteristics: it is inductive; normative; it incorporates definition of terms, and; it is economic decision useful. The first three of these are discussed in chapter two, in relation to existing theoretical underpinnings for conceptual frameworks in financial reporting. The conceptual framework, depicted in the reporting component, has the same main objective as that advocated by the Accounting Standards Board (ASB, 1995a, page 35) which is as follows:

"The objective of financial statements is to provide information about the financial position, performance and financial adaptability of an enterprise that is useful to a wide range of users for assessing the stewardship of management and for making economic decisions.

Stewardship in this context is the accountability of management for the resources entrusted to it. Those users who wish to assess the stewardship of management do so in order to make economic decisions; for example, whether to hold or sell their investment in the enterprise or whether to reappoint or replace the management".

For the purposes of the thesis, this is termed "economic decision usefulness", in the reporting component. The suggestion is that financial accountability is discharged by disclosing economic decision useful information. The Corporate Report (ASSC, 1975) proposed the notion of increased accountability to sectors of society, apart from the shareholders and capital providers. The term "public accountability" was used for this. In this thesis, the term "accountability, decision usefulness" (see diagram 4.3) is used to differentiate disclosure, which is not primarily for the financial community, and may be based on quantitative, and/or qualitative information. Macve's (1981) argument, that there is fundamentally no distinction between disclosure for accountability purposes, and economic purposes, and that all information needs to be decision useful, is applied. Most importantly, diagram 4.2 depicts the conceptual framework, developing as a consequence

of the reporting process, suggesting it is inductive, as its construction is bottom-up, formalising accounting practice. This is illustrated by the black arrows which feed into the current image of reality, and reverse, into the conceptual framework, suggesting the image is static, but not still, thereby maintaining the *status quo*.

There is no suggested connection with stewardship or decision-making, as the conceptual framework is set apart from these characteristics. The flow to stewardship and decision-making is from the current image of reality.

#### **(iv) Stewardship and Decision-Making**

As can be seen from diagram 4.2, there is a flow from the annual report (the current image of reality) to users of financial statements (stewardship and decision-making), indicated by black arrows. This is the process of discharging accountability to providers of capital, by disclosing economic decision useful information. Accounting information travelled to the providers of capital, implicitly, in this way, before the conceptual framework for financial reporting was made explicit. The development of the conceptual framework has not altered the flow of information, nevertheless, it has begun the process of standardising the reality of the information disclosed.

Users of financial statements receive the annual report, as a result of the stewardship function of company management. They then implement the information for decision-making purposes - this is represented, in diagram 4.2, by the black arrow, which shows the information flowing outwards, towards decision-making.



### **4.3.2 Corporate Environmental Reporting: A Conceptual Framework**

The characteristics developed for financial reporting, in illustrating a reality, are used in diagram 4.3, to depict a reality for environmental reporting. This provides a starting point from which the investigation into a conceptual framework for corporate environmental reporting can be developed. Note that the areas representing reality in the reporting component are not presented in the same order as for financial reporting, and that the progressions are dynamic. However, to all intents and purposes the conceptual framework for corporate environmental reporting, is that depicted in diagram 4.4.

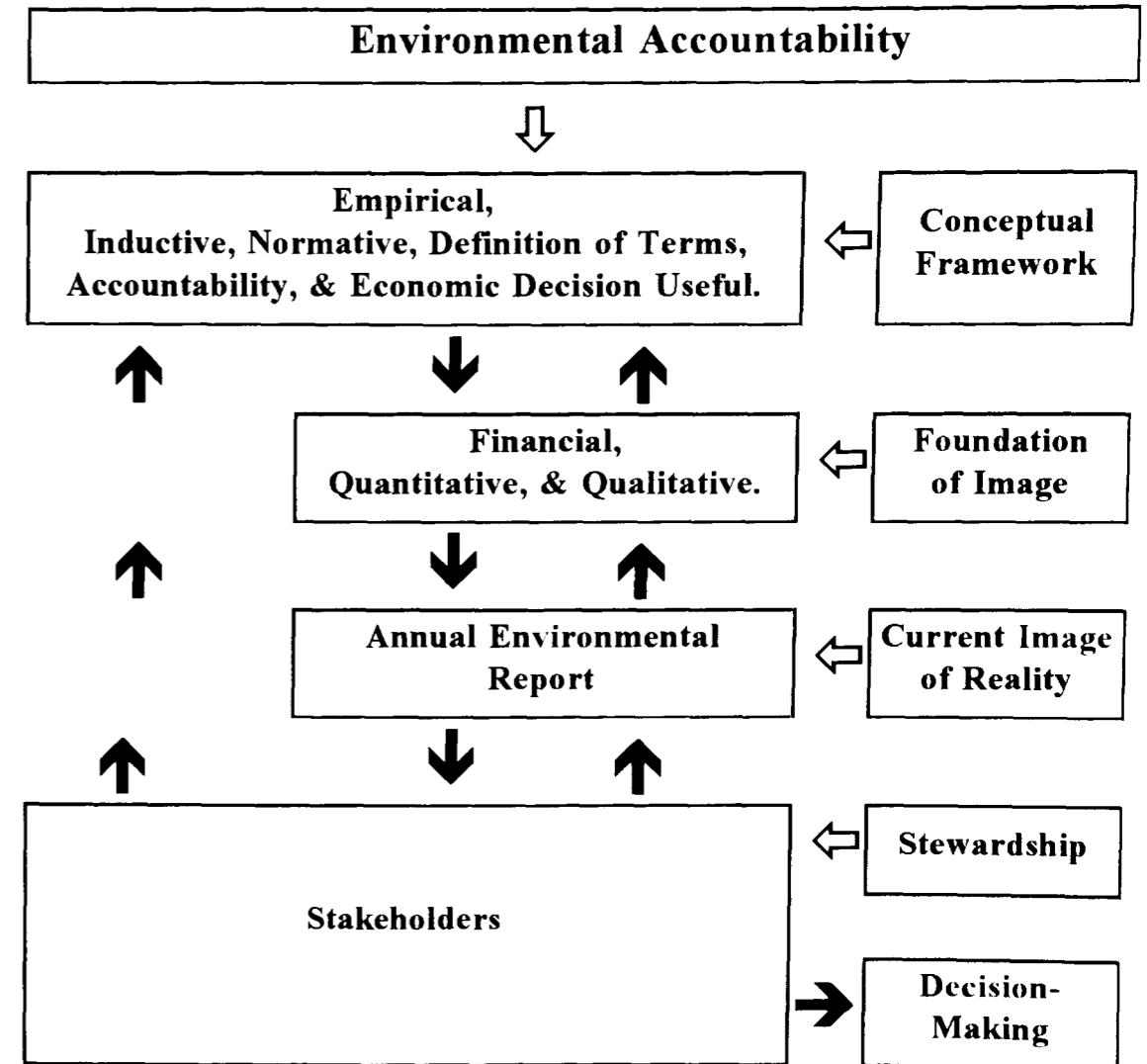
### **4.3.3 The Commonality between Financial and Environmental Corporate Accountability**

It is important to speculate on the commonality between financial and environmental corporate accountability. Essentially, this entails combining diagrams 4.2 and 4.3 to form diagram 4.5. The concept of comprehensive accountability is introduced, suggesting that only considering financial accountability is insufficient.<sup>4</sup> Important points to note include, how the two types of accountability have been separated. This represents the current image of producing an environmental report, that is, a separate document from the annual report and/or disclosing information which is not based on a financial image (see section 3.3.1).

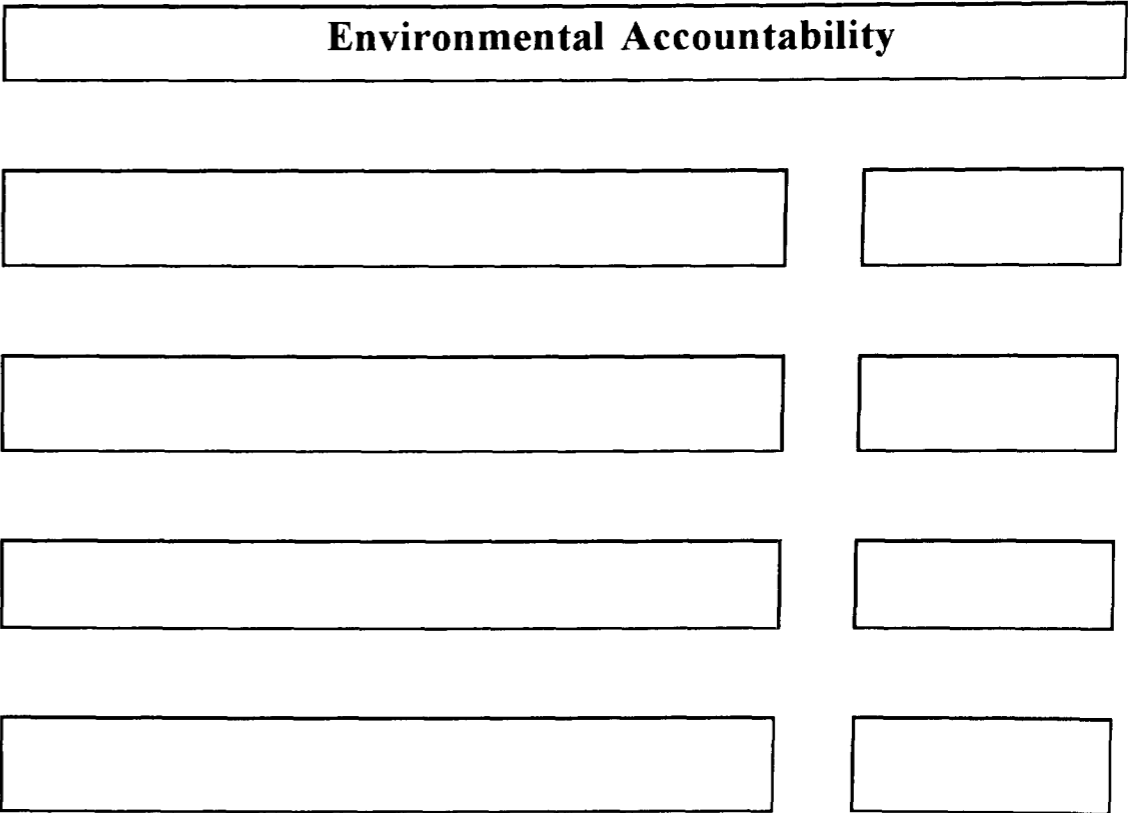
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<sup>4</sup> In time, comprehensive accountability could be expanded to incorporate further aspects of corporate social reporting, such as, for example, equal opportunities.

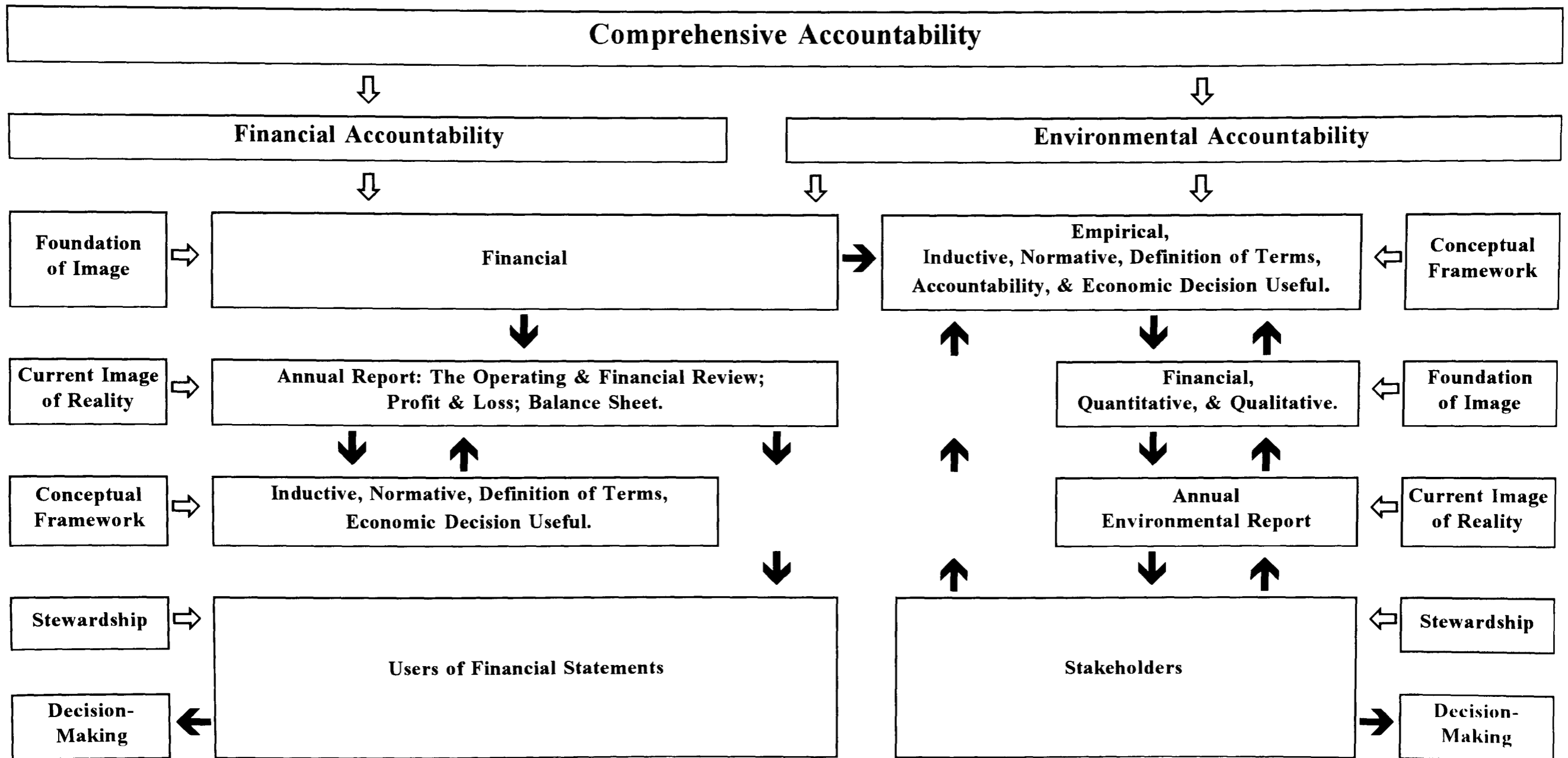
**Diagram 4.3:**  
**Reporting Component: Corporate Environmental Reporting - An Accountability Framework Example**



**Diagram 4.4:**  
**Reporting Component: Corporate Environmental Reporting - An Accountability Framework**



**Diagram 4.5:**  
**Reporting Component: The Commonality Between Financial and Environmental Corporate Accountability**



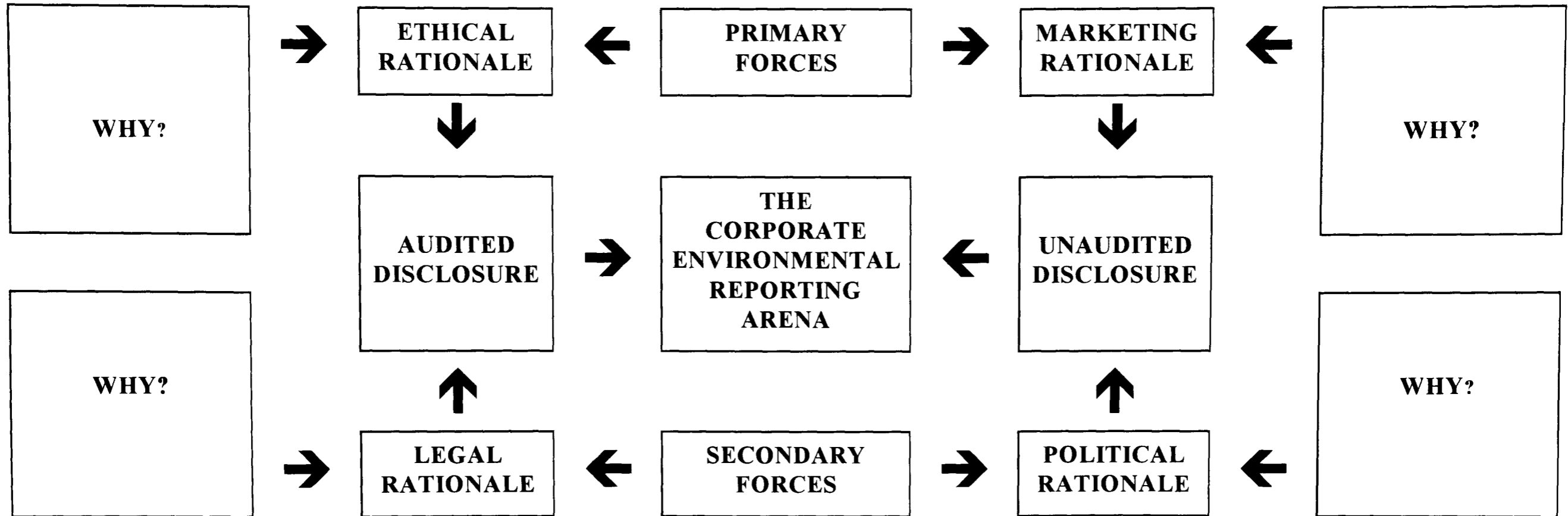
A second point to note is the relationship, depicted by a white arrow, between environmental accountability, and the "financial image". This information then passes into the conceptual framework for corporate environmental reporting, as shown by the black arrow. It encompasses that part of environmental accountability, such as contingent liabilities on pollution, the cost of cleaning water, or installing new air pollution filters. The connection here enables a financially quantifiable figure to be placed on some environmental costs to society and commerce. The connection also includes the cost of environmental fines and negotiated settlements. Further, the disclosure is financially quantifiable, in that market transactions have taken place. Flows of information, such as these, are suggested by the Advisory Committee on Business and the Environment (ACBE, 1996a and 1996b, and EAAR, March 1997).

#### **4.3.4 The Preliminary Corporate Environmental Reporting Research Questions**

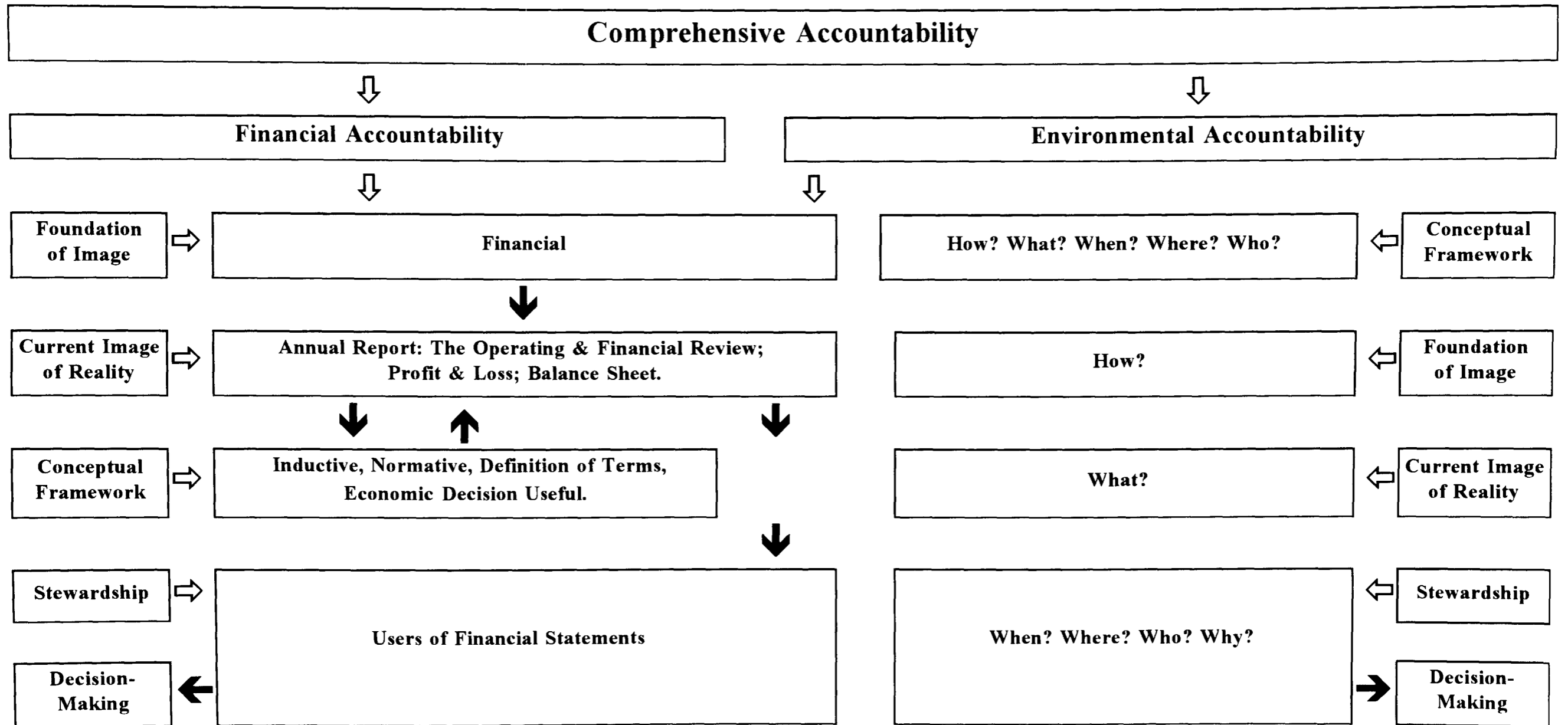
The diagrams presented in the previous two sections are here reinterpreted, incorporating the research questions. Diagram 4.6 in the context of the disclosure component, asks why do companies disclose environmental information? Is it as a result of the ethical, marketing, legal, and/or political rationales? Diagram 4.7, in the context of the reporting component, asks questions about how? what? when? where? who? and why?, for the reality areas in environmental reporting.

Finally, diagram 4.8 places the same questions in the context of the structure of the research enquiry, allowing a cross-comparison between the empirical work, the sample, and the model.

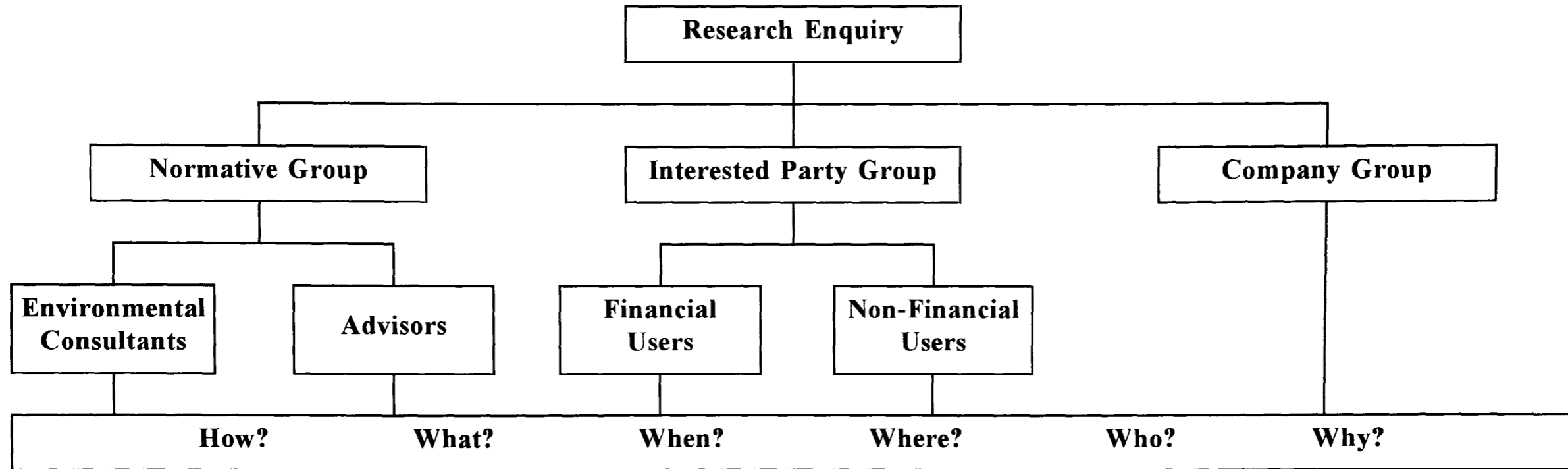
**Diagram 4.6:**  
**Disclosure Component: The Preliminary Corporate Environmental Disclosure Research Question**



**Diagram 4.7:**  
**Reporting Component: The Preliminary Corporate Environmental Reporting Research Questions**



**Diagram 4.8: The Structure of the Research Enquiry**





#### 4.4 Conclusion

Throughout the last section, a series of diagrams has been used, to depict a reality which may exist between corporate financial and corporate environmental reporting. Evidence does exist to support this relationship, the most important of which arises from the Advisory Committee on Business and the Environment. Suggestions have been made as to how the flows of information may work in practice, so as to facilitate a more comprehensive corporate accountability framework. This model is revisited in chapter nine to consider how well it has fared, in relation to the empirical results.

In this chapter, a theoretical model with two components has been presented. The disclosure component suggests possible reasons for corporate environmental disclosure. The empirical work of the thesis tests this component, with a consideration of the possible reasons for the lack of disclosure. The reporting component illustrates a comprehensive accountability framework, which combines financial and environmental reporting. The empirical results for the disclosure component form the foundations for the reporting component. These components represent a reality for comprehensive accountability. They have also been used to illustrate the preliminary corporate environmental reporting research questions.

As a last note, it is interesting to acknowledge that the sort of theoretical model development within this chapter reflects that of previous conceptual frameworks discussed in chapter two. For example, Alballa-Bertrand (1992) and Schulze and Colby (1996) use diagrams to represent the inter-relationships of variables, in a similar way to those used in this chapter. Also, Steiner *et al.* (1996) develop a two-part model and

describe it in diagrammatic form, again an approach bearing clear similarities to the current research. Further, Schulze and Colby (1996) and Walker and Ruekert (1987) develop hybrid models which combine different realities. This relates to the current model development as it introduces the notion of comprehensive accountability.

## **Chapter Five**

### **Research Design**

#### **5.1 Introduction**

In chapter two, the use of the conceptual framework methodology was discussed. This thesis investigates the development of an advanced conceptual framework (which may be positioned in the empirical cluster, see diagram 2.1), by using a survey of extant conceptual frameworks in the area (chapter two), a relevant literature survey (chapter three), the development of a model (see chapter four) and empirical testing of the model. This chapter presents the research design for the empirical testing stage of the conceptual framework methodology. For the conceptual framework model developed in the previous chapter to be operationalised, the consensus of a substantial sample of opinion-formers, users and producers of corporate environmental information is required. It is therefore necessary to design a research methodology, covering the methods of sample selection, questionnaire construction, data collection, processing, and analysis. This chapter presents the research design developed for the thesis. The discussion of the research methodology is divided as follows. Section 5.2 outlines the research methodology of the empirical work in this thesis, discussing the rationale for selecting a mail questionnaire. An important aspect of the discussion involves the techniques used to maximise response rates. Section 5.3 considers the statistical techniques used to analyse the final questionnaire responses, including a discussion of descriptive, and non-parametric, statistics. In section 5.4 the preliminary investigation is reported, comprising a discussion of the literature survey, a series of telephone interviews with a sample of environmental consultants, and a discussion of the group development for the

questionnaire survey. This establishes the building blocks for the content, and structure, of the pilot questionnaire. Section 5.5 presents the complete pilot questionnaire survey. The enquiry method and the findings are discussed, and are consequently used to develop the final questionnaire. In section 5.6, the final questionnaire design, and sample specification, are considered. Section 5.7 discusses the limitations of the research design, which include: problems of combining positive and normative approaches; problems of combining the realities of different groups and of attempting to gain a consensus from them, and; problems of how representative the respondents are of the populations they are intended to represent. The chapter concludes in section 5.8.

## **5.2 Research Methodology**

There are various research methods available for the current enquiry, including interviews, case studies, and mail questionnaires. The mail questionnaire has been selected as the main research method in this thesis. This section considers the rationale for selecting a mail questionnaire for the current research. One of the main limitations with mail questionnaires is non-response, which is also considered in the following section. The physical provisions required in such an exercise are also considered.

### **5.2.1 Rationale for Selecting a Mail Questionnaire**

The principal empirical research objective of this thesis, is to reach a relatively large representative sample in a short period of time at low cost. Interviews and case studies provide detailed information, based on small sample size and result in small sample bias. They also tend to attract a relatively high cost. A well-constructed mail questionnaire

can reach a large sample, at a much lower cost. For the purposes of this study, the major advantages of a large sample size, and lower cost, of a mail questionnaire outweigh the major disadvantages of less detailed interview data (see Bailey, 1987; Hakim, 1987; Oppenheim, 1992, and; Moser and Kalton, 1971, for further details). However, the selection of the mail questionnaire method needs further consideration.

One way of assessing the advantages of a mail questionnaire data collection method, is to compare it with the most feasible alternative, the interview method. Several advantages of mail questionnaires, in relation to standardized interviews, are discussed in Hoinville, Jowell and Associates (1989), Moser and Kalton (1971), and Oppenheim (1992). Firstly, the mail questionnaire approach is relatively inexpensive. The low cost can be attributed to the low cost of data collection, and processing. The expense of interviewing is especially prohibitive for the current study, which requires a large sample and runs on a student budget. The potential for posing closed questions, in a mail questionnaire<sup>1</sup> aids in keeping processing costs low. The pilot questionnaire in this thesis used several open questions, which allowed effective closed questions to be developed, for the final questionnaire.

A second advantage of mail questionnaires, over interviews, is the reduction in interview bias. Interview bias can undermine the validity, and reliability, of the enquiry. Bias may arise from: the way in which questions are posed; the form of probing for answers; the recording of answers, and; incorrect coding, even cheating. Another issue involves the

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<sup>1</sup> Closed questions are defined as questions which make the respondent select a response from a selection of potential responses, whereas open questions allow the respondent to write whatever he wishes.

respondents giving a politically correct answer, rather than his/her personal view. Such an effects can be minimised by using a mail questionnaire.<sup>2</sup>

A third advantage of mail questionnaires in relation to interviews is that in a questionnaire survey, responses can be considered. Interviewees can consider questions before answering, but the respondent may still feel under pressure to respond. A questionnaire presents the respondent with the time to think, in private. The questionnaire for this thesis involves the environment, a controversial issue, and therefore does not require spontaneous answers, rather deliberation. It is important that questionnaires are not too long and involved, as respondents need encouragement to reply. However, the mail questionnaire medium does give the respondent the opportunity to answer in a deliberated fashion. Fourthly, everyone in the sample can be contacted (assuming that the sample mailing list is up to date). This is not always possible by interview. Contacting everyone in the sample helps to reduce the possibility of biased responses. Another advantage which the mail questionnaire method holds over interviews is the ability to reach a geographically widely dispersed sample. Interviews can reach any geographically dispersed sample, but the manpower involved, as well as the time and cost of doing so, may be prohibitive.<sup>3</sup>

There are several well-documented limitations of the mail questionnaire methodology, cited in Hoinville, *et al.* (1989) Moser and Kalton (1971), and in Oppenheim (1992). A major limitation of mail questionnaire design involves question construction and includes

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<sup>2</sup> It needs to be added here that answering questions on the environment is an emotional issue for some respondents. It is my personal view that the most honest answers to the questions will be revealed if the respondent is left in private with their conscience.

<sup>3</sup> As a Ph. D. student this factor is particularly relevant, as resources are limited. This is perhaps why questionnaires are such a popular research method in the social arena.

the complexity of the questions, the type of language used, and applicability of the questions to the population surveyed. One of the aims of the pilot questionnaire was to consider these problems and rectify them for the final questionnaire. A second limitation involving the questionnaire approach is the inflexibility of the method. The mail questionnaire does not provide any opportunity to probe beyond the answers given. If a question is left blank, the researcher does not know why. Similarly, if there is an ambiguous answer, the researcher cannot go back and clarify. These problems could be resolved easily in an interview. Again, undertaking the pilot study helped to alleviate this problem. Thirdly, a mail questionnaire may be considered inappropriate in the following situations: where spontaneous answers are required; where only one person's views are required, or; where knowledge is being tested. The mail questionnaire used for the current research did not require spontaneous answers, nor did it test respondents' knowledge. A fourth limitation concerns independent answers. With a mail questionnaire the respondent can look at all the questions before answering any of them. As a result it is important not to include any questions, which give an indication of response to a later question. This ensures that the answers remain independent of each other. A further limitation of the questionnaire methodology is that there is no observable data, as it is not possible to collect assessments based on interview observations. Language differences are a potential limitation of mail questionnaires, however the current survey only involves UK respondents, so this limitation should not apply.

The most significant and most well-documented limitation of the mail questionnaire methodology is non-response. Response levels tend to be more variable for mail questionnaires, than for surveys conducted by interview. This limitation can cause bias in the population sample, arising from a group of non-respondents. Non-response takes

two forms: failure to answer one or more questions (item non-response), or failure to return the questionnaire. The use of a pilot survey, in the current study, attempted to reduce the likelihood of item non-response. Attempts were also made to reduce the second type of non-response, namely, failure to return the questionnaire. The next section discusses the techniques available to maximise response.

### **5.2.2 Response Maximisation Techniques**

The approaches used to increase response rates in mail questionnaires have become standard (see, for example, Hoinville, *et al.*, 1989, and; Moser and Karlton, 1971). The following techniques were suggested by Bailey (1987), Oppenheim (1992) and Heberlein and Baumgartner (1978). Effort has been made to incorporate these into the current enquiry.

Advance notice of the questionnaire's arrival may reduce non-response rates. For the current study, this took the form of a telephone call to prospective respondents, particularly in the company sample. A further technique is an explanation of sample selection. The covering letter, sent with the questionnaire, for this study, included information on the sampling method used. The intention was not only to increase the response rate, but also to overcome the problem of who completes the questionnaire, mentioned earlier. Mention of the relevant research organisation, and any sponsorship for the research, are also useful in increasing response rates. University headed paper, and the University logo, were used for the current survey, to this end. The envelope itself is important, as it must demand attention from the prospective respondent. The correspondence attracts more attention, if it is addressed to the respondent personally,



and has a first class stamp attached. It must look professional, rather than have the appearance of "junk mail".

The correspondence in the current enquiry adopted the following guidelines (suggested by Oppenheim, 1992): the questionnaire promised the respondent a level of confidentiality; the survey was confidential as only the researcher had access to information that associated a respondent with his/her questionnaire; no information was made public which identified any individual or organisation. Anonymity also increases response rates, allowing respondents to express themselves without the possibility of recrimination. However, giving respondents total anonymity would be expensive, as it would entail reminders being sent to the whole sample. This would also be unpopular with those respondents who have previously replied. Therefore, although confidentiality was maintained, anonymity was not.

Reminders followed the initial distribution of the questionnaire, which are effective ways of overcoming the low and slow response rates of mail questionnaires. As is common in such enquiries, another letter was sent three weeks after the initial mailing. Three weeks later, a second reminder enclosing a copy of the original questionnaire, and an envelope for return, was sent. At this point, steps were taken to give the reminders more impact, a sense of urgency and the importance of response. The emphasis in the reminder was that the prospective respondent is "a typical in his/her uncooperativeness".

The appearance of the questionnaire is also crucial to response rates. It should adopt a conservative, professional appearance. The length of the questionnaire is also vital to the overall appearance. The number of pages, and time required to complete the

questionnaire, have been investigated (Heberlain and Baumgartner, 1978, and Moser and Kalton, 1971), and were found to correlate with: the degree of interest to the respondent; the return envelope (first class postage stamp on return envelope instills urgency); an offer of the analysis of the results.

Various ways of maximising response rates to a mail questionnaire have been considered in this section, and have been incorporated into the current research, wherever possible.

### **5.2.3 Suggested Provisions for a Mail Questionnaire Survey**

The provisions necessary for distributing a mail questionnaire are often omitted, or not dealt with adequately, by relevant text books. As a means of future reference, it seems appropriate to provide brief details of the provisions used in the current survey. Hoinville, *et al.*, (1989) suggest that, as a rule of thumb, some 300 to 400 envelopes, and stamps, and 160 questionnaires may be needed for every 100 people in the sample. They also give the supplies needed, if a response rate of 70 per cent is achieved. In terms of the current enquiry, advance notice (by telephone), and the cost of a pilot survey to a smaller sample, must also be considered. There is the cost of paper, and printing, as well as the non-financial, logistical consideration of where to store 750 (15 page) questionnaires and 4,000 (8" x 6") envelopes. Furthermore, and of particular relevance to the current survey (or any performed by a student) there are cash flow considerations, in relation to stamps.

#### **5.2.4 Summary**

It was important to choose a research methodology appropriate to the current research. The use of a mail questionnaire is the most appropriate research method, as argued above. The next step in the research design, was to perform a preliminary investigation, which would establish the questionnaire content.

### **5.3 Statistical Tools for Analysis**

This section may be divided into several parts. Firstly, it is necessary to discuss the choice of non-parametric statistical techniques for the analysis of the questionnaire responses. Then follows a discussion of the various individual tests used throughout the analysis.

#### **5.3.1 A Need for Non-parametric Statistics**

The statistical analysis of questionnaire responses is a grey area, as it is unclear whether to use parametric statistics, assuming a normal distribution, or less demanding non-parametric statistics. The advantages, and perceived disadvantages, of non-parametric statistics are discussed in Siegel and Castellan (1988, pages 35-36). The main problem with data collected *via* a questionnaire, concerns data classification. Ranked questions produce data which are ordinal. However, some authors treat such data as ratio data, which can be analysed using parametric statistics. Gore (1994, page 1), in a survey of accounting questionnaires appearing in the literature, makes the following observation:

"Many questionnaire-based surveys ask for expressions of opinion on given statements. Often these surveys use Likert or similar scaling techniques. Papers

in the field of accounting often then go on to utilise parametric-based methods such as t-tests to analyse the responses. It is the contention of this paper that this usage is at least questionable".

Oppenheim (1992) supports this view, when he says that researchers frequently "bend the rules" (page 188), so as to use stronger, parametric statistical tests. Joseph and Hewins (1995), for example, used non-parametric statistics to test the attitudes of questionnaire respondents. However, Bebbington, Gray, Thompson and Walters (1994) used parametric statistics to test the attitudes of their respondents. There seems to be no clear consensus, or guideline, on which is the most appropriate type of statistics to use. It is a matter of choice for the researcher. The arguments forwarded by Seigel and Castellán (1988), and Gore (1994), are convincing, indicating that attitudinal surveys, such as the current research enquiry, are more appropriately analysed using non-parametric statistics, where possible. Having said this, one parametric test, factor analysis, is used in the current study, as no non-parametric equivalent of this test exists.

This thesis adopts the view that data issuing from a questionnaire should not be treated in the same way as other types of data. Economic data, for example, are characterised by observations which are continuous. The statistical inferences made during their analysis are therefore based upon parametric assumptions. In other words, certain assumptions concerning the distributions of the sample populations of economic data may be made, which are necessary preconditions for the application of parametric statistics, such as linear regression analysis. However, such techniques cannot be applied to non-parametric data. The responses yielded by a questionnaire result in samples which are non-parametric, or non-distributional, in type. Non-parametric statistics demand much less from the data. Another, and probably more substantial, reason for using non-parametric statistics, is that they can be used to analyse data which uses an ordinal scale.

Parametric statistics are considered by some inappropriate, when the data are ranked, as discussed above.

Non-parametric tests indicate whether differences, between two sample populations of responses, could have occurred, purely by chance, or whether the data derive from separate samples (see Siegel and Castellan, 1988). For the analysis, the computer software "Statistical Package for the Social Sciences" (SPSS) "version 6 for windows" was used (see Norusis, 1993, and 1994). To select which tests from the available spectrum are most applicable, the structure of the questionnaire was considered, with respect to which questions need to be answered by the analysis. What knowledge is required from the responses? The answers are implicit in the responses, and the non-parametric tests are a means of extracting the findings from the data, so that inferences may be drawn.

Having considered the above, non-parametric tests are used to examine the responses in the questionnaire. Descriptive statistics are employed to provide an overall impression of the respondents' views. These, however, do not test significance, and therefore cannot be used for hypothesis testing. Wilcoxon bivariate tests are applied to each question, to discover the respondents' relative preferences for their proposed responses, to each question. Two and three sample Kruskal-Wallis tests are used to examine differences, and similarities, of opinion, between the three respondent groups. These, particularly, indicate areas of consensus between the three groups, which can then be used to operationalise the conceptual framework for corporate environmental reporting.

Several tests are now discussed in the context of the questionnaire, and a plan for analysis of the complete results will be laid out. For each test, the type of data necessary for the test, the testing procedure, and a possible application to the questionnaire response results will be considered. The descriptions of the procedures are mainly taken from Siegel and Castellan (1988).

### **5.3.2 Statistical Tests used to Analyse the Questionnaire Responses**

The first group of statistics used to analyse the questionnaire responses are known as descriptive statistics. These, as implied by their generic title, describe the characteristics, and general tendencies of the responses. This group of statistics are used to summarise the data. They may indicate the general opinions expressed by the respondents, but they cannot be used to represent preferences held by the respondents. This is because they give no means of testing statistical inference. The mean average is the most commonly-used, and widely-understood, of the three average measures. The mean average is one of the most elementary types of statistics, known as measures of central tendency. This means that it identifies the middle, or centre, of a set of responses, or scores (see Jaeger, 1990, for example). The mean average score is given for each question. Another descriptive technique used to summarise the responses to each question, is the standard deviation. This is one of the available measures of dispersion, or variability. It is a measure of the spread of the scores, about the central point, measured by the mean average. The two statistics, therefore, complement each other. The standard deviation gives an impression of how much the respondents' views vary from the average, or general, view (see Johnson and Siskin, 1980). Lastly, the percentage rating was calculated for each question, as a summary statistic. This relates to the notion of

dispersion. It is a measure of how many (expressed as a percentage) of the respondents present a score lying within a given range. In this research, the scores of 1 and 3, or 1, 2 and 4,5, were used as extreme scores, and the percentage voting each of these was shown for each question. The aim was to show whether the respondents felt strongly enough about the matter in hand to give an extreme score, or whether they generally reported scores around the mean average (see table 6.1 for examples of these statistics and note that each of the propositions for the question have been ranked in descending order).

As summary, or descriptive statistics, can only describe the data, and cannot be used for tests of significance, it is therefore not possible to test hypotheses, or theories, about the respondents' views, using solely descriptive statistics. Therefore, stronger statistical tests were employed to this end.

The Wilcoxon signed ranks test, allows comparisons to be made within questions. This test facilitates the comparison of the respondents' views of the various proposed answers within each question. The Wilcoxon test allows preferences to be located, for particular propositions in a question, by ranking the propositions. Due to the construction of some of the questions, where three types of disclosure were also presented as a choice for the respondents, the Wilcoxon test allowed detection of preferences for one proposition to be disclosed in one of the three forms of disclosure. In more specific terms, the Wilcoxon signed ranks test allows differences in the direction and magnitude between paired responses, to be used in order to compare the respondents' views. It allows the research to test whether the responses to one proposition in the same question are generally higher than, or greater than, the responses to another proposition. The null

hypothesis is that the two sets of responses (here, to two different propositions within the same question) are samples from populations with the same median, and the same continuous distribution. Rejecting the null hypothesis means that the two sets of responses are from populations with different medians, and continuous distributions (see appendix D for examples of Wilcoxon tables).

The Kruskal-Wallis test allows the researcher to compare the responses of different groups and discover whether or not they are giving the same answers. As three major groups of respondents were targeted by this questionnaire survey, the Kruskal-Wallis test was particularly valuable. The test revealed for each question, points where the three groups differed in opinion, and points where they tended to be in agreement. The test was used to show if sub-groups are homogeneous. It was also used to reveal any late response bias. Lastly, the Kruskal-Wallis test was employed for the final comparison of responses between the three major groups of respondents. In more specific terms, the Kruskal-Wallis one way analysis of variance by ranks test allows the researcher to decide whether two (or more) samples are from the same population or from different populations. As stated in Siegel and Castellan (1988, page 206) :

"Sample values almost invariably differ somewhat, and the question is whether the differences among the samples signify genuine population differences or whether they represent merely the kind of variations that are to be expected among random samples from the same population".

The null hypothesis is that the samples come from the same population, or from populations with the same median. Acceptance of this null hypothesis implies that the variables have the same underlying continuous distribution. This is similar to the null hypothesis used in the Wilcoxon test. However, this test can be used to compare responses to the same question, but for different sample populations. Thus, the use of the test is different. Rejection of the null hypothesis thus implies that the two samples



tested are from different populations. This test can be used to check whether or not respondent groups, comprising a number of sub-samples, are homogeneous.

The last statistical technique employed, is factor analysis. This approach draws out underlying factors, from the multitude of propositions given in each question. Factor analysis is widely-used as a method of creating a parsimonious group of variables, representative of a much larger group. As stated in Jaeger (1990, page 345):

"The principal objective of factor analysis is to construct a small number of variables (called factors) that do a good job of conveying the information present in a large number of variables".

In the current research, this technique allowed "attitudes" held by the respondents to be ascertained. It indicated how the responses fell into general attitude areas. There are many factor analytical techniques for finding these factors, and the technique chosen on SPSS was "Principal Components" (see Kim and Mueller, 1978, and Jaeger, 1990, for an explanation of this and other techniques, also see Norusis, 1994, for an explanation of factor analysis on SPSS). This method differs from other available methods, in its underlying assumptions, and some computational details. It was chosen because it tends to be one of the more widely-used methods (see Oppenheim, 1992, for a discussion of factor analysis and principal components). Principal components analysis assumes that each of the variables can be divided into two parts, namely: an error component and a "true score" component. The method calculates the correlations between every pair of variables. Then an "unrotated" or "original solution" is found. This is an initial factorisation which allows one factor to represent every variable. This means that at this stage there are as many factors as variables. However, another stage is required in the analysis, as a parsimonious result will give less factors than variables. This next stage is known as "rotation" and the technique used in this study, was a "varimax orthogonal

rotation". Two other rotation methods exist but their aims are identical. They all aim to define a set of rotated factors, which have high correlations with some of the original variables, and low correlations with all others. The aim is also that all the factors are uncorrelated (orthogonal) with each other. The correlations between the original variables, and each factor, are known as the factor loadings. The "eigenvalues" indicate how much of the variation in the entire set of original variables is accounted for by each factor. A general rule, used in this survey, is that factors are only selected which have eigenvalues larger than 1 (please refer to table 6.10 for an example of factor analysis. Note that the propositions are all ranked in order of descending mean averages). Factor analysis is in fact a parametric test which is often used in non-parametric studies (see Oppenheim, 1992).

Note that the significance level employed throughout the analysis of the questionnaire was 1%. This was selected as it represents a high hurdle for the statistics to jump. Given the extensive number of questions, and the number of respondent groups, it was deemed necessary to consider only highly significant test results. This allowed the most salient points to be discussed, and eventually incorporated into the theoretical framework. As Bebbington *et al.* (1994, page 117) points out:

"More definitive interpretation seems ill-advised, not least because a 90% level of confidence is far from compelling".

### **5.3.3 Summary**

This section began by discussing the grey area of parametric, and non-parametric, statistics, when applied to questionnaire analysis. The research favoured the use of non-parametric statistics, where possible. Then, followed a discussion of the statistical tests

used in the analysis. The importance of this section is paramount, as the resulting statistical interpretation will provide the necessary rigour, to discuss the possibility of a conceptual framework for corporate environmental reporting.

## **5.4 Preliminary Investigation**

The preliminary investigation centred around clarification of the research enquiry, formulating reality, and establishing the sample. The clarification of the enquiry began with the literature review, where a reality was developed (please refer to section 3.2). Key parts of this reality were in turn tested by a series of telephone interviews, following this there was an investigation into the appropriate sample for the questionnaire. This procedure is described below.

### **5.4.1 Literature Review**

The discussion of extant conceptual frameworks across disciplines as well as in financial and environmental corporate reporting in chapter two, and the survey of relevant literature in chapter three, set the scene for this research. A main aim of surveying the relevant literature was to pinpoint salient areas in the current environmental reporting debate. The survey divided the enquiry into four broad areas:

- practical implications, such as elements and measurement bases, needed for a conceptual framework for corporate environmental reporting;
- theoretical implications as to why companies do, and do not, report;

- the involvement of accountants and relevance of accounting methodologies in corporate environmental reporting, and;
- the comparability between corporate financial and environmental reporting.

Of course, a survey of the relevant literature can at best be incomplete. A large proportion of the literature seemed generally to represent an academic, and stylised approach, to a reality for environmental reporting. In addition, it seemed necessary to canvas the opinions of people, at the forefront of corporate environmental reporting, prior to the questionnaire survey. These interviews aimed to confirm that the academic literature is relevant to the research, and to the environmental issues in the "real world". A series of telephone interviews was conducted, with environmental consultants, the sector of society most closely involved with corporate environmental issues, and the current agenda.

#### **5.4.2 Telephone Interviews**

Although a mail questionnaire methodology was chosen for the main survey for the many reasons discussed above, an interview methodology seemed appropriate for the preliminary research. This was because only a small sample was required, in order to establish a common understanding of the research to be undertaken, before compiling and distributing hundreds of mail questionnaires. These interviews formed an integral part of the research methodology, as they represented one of the main building blocks upon which the questionnaires were developed. Environmental consultants were selected for the sampling population as they are in a unique position. They not only advise

companies on what environmental information to disclose, but are also actively involved in the process of reporting. As a result, their views are complimentary to the literature.

The sample consisted of nine environmental consultants<sup>4</sup> drawn from membership of the "Association of Environmental Consultancies", which comprised 22 members in August 1994. The interviews took between 15 and 30 minutes and pre-written questions, based on the literature review, were used to explore the following main themes: possible elements for a conceptual framework in corporate environmental reporting; measurement bases used in corporate environmental reporting; the rationale for corporate environmental disclosure, and; clarification of terminology. The notion of an "everyday reality" was also clarified *via* telephone conversations with the environmental consultants.

The telephone interviews indicated the following general conclusions:

- terminology is a problem in the area;
- environmental consultants use three types of disclosure (financial, quantitative and qualitative) to get the company's message across to interested parties;
- there was consistency between the consultants as to what should be reported;
- the main reason for company's disclosure of environmental information appeared to be only as a result of legislation. Most importantly, legal environmental compliance was a risk that companies had to face, and;

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<sup>4</sup> Due to limitations on time and resources, five environmental consultants seemed an appropriate number. However, a concise set of answers was not forthcoming, so the sample was incrementally increased. At nine interviews, the objectives were achieved.

- with respect to the elements of a conceptual framework, two possibilities were advocated, they were firstly, air, land and water, and secondly, specific pollutants.

Overall, the telephone interviews confirmed much of the debate in the literature, thereby supporting "a reality", as discussed in section 3.2 and providing findings to inform the content of the questionnaire.

#### **5.4.3 A Discussion of Group Development and Group Meaning for the Questionnaire Survey**

A novel feature of the current research methodology is the comparison of three different respondent groups, active in corporate environmental reporting. The advantage of this three-pronged approach to investigating corporate environmental disclosure is that it allows a consensus to be gained, and also allows inter-group attitude comparisons to be made. The telephone interviews provided useful information for the development of these three respondent groups, which form a basic element of the questionnaire survey in this thesis. Establishing the definitions of groups is an essential precursor to sample selection for the questionnaire survey. The groups are: a normative group, an interested party group, and a company group. There is a full discussion of sample selection in Hakim (1987), Hoinville *et al.* (1989), Moser and Kalton (1971) and Oppenheim (1992).

## **(i) The Normative Group**

*"Normative (Latin, norma): serving as or prescribing a norm; also according to a norm".*

Longman's Dictionary (1991).

Research using a mail questionnaire method, in the area of Accounting and Finance, considers frequently the attitudes of users, and/or corporate management. In this thesis, the views of a "normative group" are considered, and while it is not uncommon, in the academic accounting literature, for an individual normative view to be forwarded, this study canvasses a consensus normative view from a large sample. The aim of incorporating a normative group is to shed light on what corporate environmental information "should" be disclosed - but from a normative perspective. In this thesis, the normative group represents organisations which prescribe a "norm" for corporate environmental disclosure. In particular, it is the distinction of a normative group which is different from most surveys in accounting. The rationale behind the inclusion of a normative group, in the survey, rests on the fact that the individuals and organisations within the group are opinion-formers. They express their views, as to what environmental information should be disclosed, by company management. They are not necessarily users of this environmental information. Therefore, their perspective is normative.

The next stage is to discover who the opinion-formers may be. The literature suggests (see Directory of Environmental Consultants, 1992/93) that an important grouping in corporate environmental reporting consists of environmental consultants. They interact with companies concerning the content of environmental reports. Much of this is a result

of legislation but also, this interaction results in the expression of the normative views of the consultants. Therefore, the normative group for the research in the thesis comprises of a large sub-group of environmental consultants.

However, the environmental consultants are not alone in suggesting what environmental information companies should disclose, from a normative standpoint. There are a myriad of organisations which make suggestions as to what companies should disclose. These are collectively termed, for the purposes of the thesis, the advisor group, and constitute the other main sub-group within the normative group. The advisors selected for the purposes of this research include: academics, professional organisations, local government, quangos, central government, trade associations and industry associations. The individuals and organisations within this group, advocate policy decisions which are normative. All these sub-groups within the advisor sub-group can be considered to provide normative views of what should constitute corporate environmental disclosure. Therefore, the assumption is that their views can be aggregated to represent one overall consensus normative view.

The main difference between the two main sub-groups is that the environmental consultants are paid to make these suggestions whereas the advisor group generally tends to provide their suggestions and opinions free of charge. Yet, overall the members of both major sub-groups, the environmental consultants and the advisors, have a normative aspect in common, that is, they have views on what environmental information company management should disclose to interested parties.



## **(ii) The Interested Party Group**

An interested party is, for the purposes of this thesis (definition used in the questionnaire) :

"Any person or organisation who is interested in, or uses, company environmental information".

The interested party group is composed of traditional users of corporate information. The aim of including an interested party group is to establish what interested parties, as users of corporate environmental report, actually require. The interested party group again comprises, for the purposes of this thesis, two sub-groups, namely financial, and non-financial, users.

The financial group includes insurance companies, fund managers, ethical fund managers, independent financial advisors and banks. The literature discussed in section 2.3.1 and 3.4(v) suggests that primarily a group of financial users exists who require accounting information for decision-making purposes. These sources provided the rationale for incorporating the financial user group and its sub-groups in the questionnaire survey, to represent the financial component of interested parties. It would be presumptuous to assume that only the financial community is interested in corporate environmental disclosure. Therefore, a sub-group of non-financial users was developed, based on the literature in sections 3.3 and 3.4(v) which includes environmental pressure groups, educational bodies, research bodies, political bodies, statutory bodies, professional bodies, public bodies, local government, charities, media, and statutory bodies. This is very much in line with the literature survey, in that companies not only need to report to traditional stakeholders (such as shareholders), but they now need to report to new stakeholders.

A major difference between the two main sub-groups of the interested party group is that the financial users require the information in order to make financial decisions, whereas the non-financial users require the information for more socially-oriented decision-making purposes. However, there may be some overlap.

Both the major sub-groups and their component sub-groups require information for decision-making purposes and this overriding theme allows them all to be considered as an interested party group.

### **(iii) The Company Group**

In order to ascertain what the actual state of corporate environmental reporting is, a company group is incorporated into the questionnaire survey. The aim is to include a selection of large companies, both public and private, which attempt to represent the present state of corporate environmental reporting. Large companies represent the most advanced form of corporate environmental reporting presently. They also hold the "bigger stick" (section 3.2) in creating a corporate environmental reporting image of reality. Both the FT100 and the Times 1000 are used as populations for sample selection in the pilot and final questionnaires respectively, as they provide valid representation of large companies. This selection process is discussed in detail in later sections.

Within the company group, there are companies from all the major industrial sectors, including, for example, food manufacturing, transport services, chemicals, water, electricity, stores, business services, electronics, mines, property and agriculture. There are various industrial classifications. The one chosen for the thesis is the Times 1000.

These industry classifications are all relatively arbitrary, as there tends to be a great deal of conglomeration in today's economic climate. For example, if a company's major business activity (i.e. 25% of turnover) is in a particular industry, and this represents its highest concentration, then it is classified in that sector. Therefore, the industry sectors really represent clusters of companies with some concentration in a certain business. This implies that companies from these industrial sectors can, with some confidence, be treated as one group. In order to reflect British commerce as a whole, it is important that these groups are represented in the current survey. In relation to corporate disclosure of environmental information, however, there may be some differences between industries. As can be seen from section 3.3, some industrial sectors such as chemicals have produced their own set of voluntary guidelines, suggesting that they need to disclose more environmental information on a voluntary basis. The same can also be said for the water industry, which is under a great deal of legal pressure to report on water quality (see section 3.3.1). The statistical significance of these potential differences are considered in section 5.7.

#### **5.4.4 Summary**

Each stage of the preliminary investigation added to the depth of knowledge required to develop an understanding for a conceptual framework for corporate environmental reporting. The literature review, telephone interviews, and sample definition, all created a cohesive reality, that the researcher was content with. This reality in turn provided a basis from which to develop a pilot questionnaire, which is discussed in the next section. An essential aspect of the preliminary investigation was to develop the definitions of the three groups of respondents to be targeted by the questionnaire survey.

## **5.5 Pilot Questionnaire Survey**

The next stage in the research design was to specify the sample groups, and distribute a pilot questionnaire to them. This section discusses the design of the research methodology, i.e. the writing, distributing and analysis of the pilot questionnaire. The method is consistent with that advocated by Hakim (1987), Moser and Kalton (1992) and Oppenheim (1992). The sample for the pilot questionnaire comprised the normative, interested party, and company groups.

### **5.5.1 Pilot Questionnaire Design**

The pilot questionnaire design aimed to examine question construction, and questionnaire logistics, as well as to test response maximisation techniques. The objectives of the pilot questionnaire design were as follows:

- to establish a questionnaire length which would allow completion within 30 minutes;
- to develop a user-friendly format for the questionnaire;
- to filter out questions which were inappropriate, irrelevant or simply wrong;
- to use the pilot questionnaire as a stepping stone to introducing ranking in the final questionnaire, and;
- to confirm that there were three distinct sample groups and that there was some consensus between them.

## (i) Question Content and Construction

The next stage was to incorporate the findings from the literature (chapter three) and use the model (developed in chapter four), with the findings from the telephone interviews, into a set of questions. The derivation of the content of the questions can be seen in appendix B. Each one of the guidelines represented in tables has a tick by each one of the propositions incorporated into the questions concerned with items of corporate environmental information that should be/are disclosed. The remaining questions were all derived from the literature survey (see sections 3.3 and 3.4).

A pilot questionnaire was developed for each of the three groups (see appendix C). A questionnaire was composed for each respondent group. For the normative, and interested party groups, the questionnaires were the same<sup>5</sup> except for the phrasing of the questions. There were 23 questions for the normative, and interested party groups, and 27 questions for the company group. Of the 23 questions, common to all three groups, ten were identical. For the rest, the terminology of those remaining was altered to suit each group. An example of the differences in question terminology, for each group, is as follows:

- Normative Group:** What company environmental risk information do you consider to be of use to interested parties?
- Interested Party Group:** What company environmental risk information would be useful to you?
- Company Group:** What company environmental risk information do you disclose to interested parties?

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<sup>5</sup> See appendix B, for the questionnaires.

The purpose of this was to enable sensible comparison between the three groups. The order of the questions was random.

There were four categories of question used in the pilot questionnaire. The first category may be referred to as "the type of disclosure questions". These asked the respondent to tick as many propositions in a question as they considered relevant, in relation to any of the three types of disclosure, financial, quantitative and qualitative (see the company pilot questionnaire, in appendix C, for questions 1, 2, 4, 5, 6, 8, 11, 12, 13, 15, 17, 18, 19 and 20). Question 22 was similar, it did not ask about types of disclosure, but about assessing and reporting impact. The second category of questions may be termed "the Yes/No classification question". These asked the respondent to tick as many propositions as they considered relevant in each question (see the company pilot questionnaire, in appendix C, for questions 3, 7, 14, 16, 21, 23, 24, 25, and 26). The third category of questions can be referred to as "the open questions". There were two specific forms. Firstly, questions 9, 10, and 22 asked the respondents to write their views. Secondly, each of the remaining questions had an open section at the end, for the respondent to add further information, if they wished.<sup>6</sup> After completing the pilot questionnaires, for each group, they were distributed, and the next section discusses the logistics and response maximisation techniques used.

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<sup>6</sup> Note that the extra questions in the company pilot questionnaire, which were not in the normative or interested party group questionnaires, were 9, 10, 23 and 24.

## **(ii) Questionnaire Logistics and Response Maximisation Techniques**

This section looks at the questionnaire logistics, and response maximisation techniques, discussed in section 5.2.2 as applied to the pilot questionnaire. It also provides a list of the provisions required for the pilot questionnaire (see section 5.2.3). The process involved the primary mailing, two reminders, and the use of response maximisation techniques. To begin with, a draft pilot questionnaire was prepared for each group, and several members of the department gave their suggestions for improvement. The suggestions were incorporated and the pilot questionnaire was laser printed, and sent to multilith. White envelopes (8" x 6") and stamps (1st class) were purchased. Headed paper was acquired from the department. The decision was taken to use the headed paper with the title "Centre for Interdisciplinary Research in Accounting and Finance", emphasising the interdisciplinary nature of the research, and the sponsorship, and support, of the survey by the department. A personalised covering letter was laser printed using "mail merge" on "Wordperfect 5.1 for Windows", for each member of the sample (see covering letter in appendix C). Two sets of envelopes were printed, the first with the addresses of each sample member, and the second were self-addressed. First class stamps were attached to the return envelopes. The packages of covering letters, pilot questionnaires, and stamped return envelopes, were posted on 2nd January, 1995.

The next stage was to send the reminders. The covering letter asked for the pilot questionnaire to be returned by 18th January, 1995. A reminder letter was sent to those who had not responded, on 19th January, 1995. There were two problems. Firstly, there was a flux of questionnaires after the 18th January, and secondly, a series of telephone calls to the departmental secretaries asking for new questionnaires, as the originals had

been mislaid. Therefore, rather than sending the next reminder on the 2nd February, it was delayed until there was a definite levelling-off of response. On 8th February, a new package was sent to the organisations who had not sent a completed pilot questionnaire. The wording of the reminder letters was chosen so to persuade the respondents to answer. Six months later, an analysis of the results was sent to those who requested it.

The actual provisions<sup>7</sup> used were assessed, after the pilot survey was completed, and are summarised in table 5.1 below:

**Table 5.1: Actual Provisions for the Pilot Questionnaire**

<b>Sample Size 29</b>	<b>Covering Letters</b>	<b>Pilot Questionnaires</b>	<b>Envelopes</b>	<b>Stamps</b>
Primary Mailing	29	29	58	58
Less: Response 20%	(12)	(12)	(24)	(24)
First Reminder	17	17	34	34
Less: Response 20%	(5)	(5)	(10)	(10)
Second Reminder	11	11	22	22
<b>Total Amount</b>	<b>57</b>	<b>57</b>	<b>114</b>	<b>114</b>

To this, the cost of interviewing the environmental consultants on the telephone for between 15 and 30 minutes each, needs to be added, as well as the distribution of 20 reports on the pilot results to the respondents who requested it. After all the responses had been received, they were analysed for each sample group and an overall view of all the responses was formed. This process is discussed in the next section.

<sup>7</sup> In all, 57 pilot questionnaire packages were sent which included a covering letter, a pilot questionnaire, and a self-stamp-addressed envelope. First class stamps were used (25p each) which amounted to £28. Headed paper was provided by the department. White envelopes were provided by myself and each letter was printed on an individual basis.



### **5.5.2 Sample Specification, Response Rates and Response Themes**

This section discusses the sample specification, and response themes, of each of the pilot groups. However, more importantly, the section formulates a pattern for the research design which is repeated for the final questionnaire. The analysis for the pilot questionnaire was superficial, in that it relied on a summation of the scores for each proposition. This was adequate as it provided a means by which collation of the data could be made. Also, as a result it was possible to ascertain an overall view of any problems with questions or propositions

#### **(i) The Normative Sample for the Pilot Questionnaire**

At the end of the telephone interviews, the environmental consultants were asked if they would help further by participating in the pilot questionnaire. They all responded positively. The environmental consultants made up the normative group for the purposes of the pilot questionnaire. From a sample of nine, there were eight completed questionnaires. The sample which was initially drawn from the membership of the Association of Environmental Consultants was compared to those consultancies found in the Directory of Environmental Consultants (1992/93). The reason for this was to ensure that the consultancies were representative of the larger sample population. It was necessary to confirm that the sample included consultancies which were established and relatively new, and large and small. The environmental consultancies ranged in establishment from 1947 to 1989. One of the environmental consultancies was part of a Big Four accounting partnership. Another was part of a large, and prominent management consultancy, a third, part of a large construction company. Another

consultancy was involved in corporate environmental reporting in the international arena. The remainder were all independent environmental consultancies. The completed pilot questionnaire response rate for the normative group was 89%. The mean time to complete for this group was 25 minutes, with a range of 17 to 30 minutes.

### **(ii) The Interested Party Sample for the Pilot Questionnaire**

The pilot sample for the interested party group was divided into two categories: the financial users, and the non-financial users. The source for the pilot sample of non-financial users was derived from the Directory for the Environment (1994). The sample included pressure groups, the media, political parties, and research organisations. The sample for the financial users included high street banks, environmental unit trusts, and investment trusts. The overall usable response rate for the interested party group was 70%, and the size of the sample was 10. The mean time taken by this group, to complete the questionnaire, was 37 minutes with a range of 25 to 55 minutes.

### **(iii) The Company Sample for the Pilot Questionnaire**

The pilot sample for the company group<sup>8</sup> consisted of ten companies, drawn from the FT100. All the companies responded to the questionnaire, with a completion rate of 50%. The mean completion time for this questionnaire was 22 minutes, with a range of 20 to 30 minutes. Each of the ten companies selected was from a different FT industrial

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<sup>8</sup> It is important to note here that a distinction was made in the questionnaire between the personal views of the company respondents and company policy. This distinction was made by separating personal views and company policy into different sections of the questionnaire. See Bebbington *et al.* (1994) for relevant comments.

sector with a company in each of the following sectors completing the questionnaire: food wholesale and retailing; stores; hotel and leisure; insurance, and; chemicals.

Companies from the following industrial sectors, did not complete the questionnaire: health and household; tobacco; communications; banks, and; oil, gas and nuclear power.

Two of the companies which did not complete the pilot questionnaire, gave the reason that it was too time consuming. One company, due to the international nature of its operations, stated that this feature made it impractical to complete the questionnaire (however, four very useful publications were enclosed). Another company (in the tobacco sector) turned down the opportunity to be involved in the pilot study, stating:

"...we don't necessarily agree with issuing environmental reports until the ground rules are considerably clearer than they are now".

The European Environmental Affairs director from the company which did not complete the questionnaire from the health and household sector, provided several reasons for non-participation. Firstly, he found it impossible to complete the questionnaire, and secondly :

"Finally, I do have concern that company environmental reports are only read by the company's own staff and environmental managers of other companies".

Overall, the companies in this group enclosed a vast amount of literature with their responses, the majority of which was extremely useful.

#### **(iv) A Discussion of the Response Themes Arising from the Pilot Questionnaire**

Several themes arose from the normative group's responses. Firstly, there seems to be evidence of a "Conflict of Interest" from the questionnaire responses from this group. For example, in the question on who should verify environmental information, the

environmental consultants chose themselves as the group who should verify environmental information. There were no votes for verification not being necessary. Another example of this may be found in the question on environmental incidents, where the environmental consultants did not vote for any proposition which involved them dealing with the public directly. The voting for the question on who should pay for corporate environmental disclosure showed a preference for the company absorbing the full cost of environmental disclosure. There was also higher voting in the questions where disclosure required specialist knowledge and practice as well as skills possessed particularly by this group of respondents. A good example of this may be seen in the question relating to environmental indicators. Specific pollutant concentrates were shown to be the most useful to the respondents. As a group, the environmental consultants showed a keen interest in this area. A second theme apparent from the analysis of the normative responses was that of "Consistency in the Voting". It could be seen that the respondents voted consistently between the propositions, disclosure types, and propositions with types of disclosure. This would seem to be due to the respondents' professional capacity. The "Disclosure on Land Contamination and Remediation" is another apparent theme arising from this group's responses. Although the voting was as expected for this proposition, the scores were surprisingly high. This would suggest that it is an important area of environmental concern. Fourthly, the group seemed interested in "What Environmental Information do Users want?". The message coming across is that the information should be comparable with corresponding information over time - annually. There must be information on companies' compliance with legislation. The normative group's attitude was that interested parties wanted some measure of environmental efficiency and this can be judged by the use of company target-setting. A successful company in these terms is one which reduces its inputs and outputs with

respect to the environment over time. The information will result in comparison of companies in the same industry and between industries, leading to a type of league table, which will not only indicate the least and most destructive undertakings of business, but also those businesses which are foremost in reducing their environmental impact. "Ideal or realistic disclosure" is a fifth theme. Several respondents in the normative group made comments as to whether the answers to the questions should reflect an ideal type of disclosure or a realistic type of disclosure. Time period for the enactment of the disclosure was also important for this group. Another theme is that of "Type of Disclosure". Quantitative disclosure received the highest vote overall from this group of respondents (44% preferred quantitative disclosure). It is striking that there was significant voting in all three categories (21% for financial and 35% for qualitative). This provides evidence to support several comments made by this group, namely that disclosure is needed in all three areas and that it is difficult not to vote for all three disclosure types. To conclude, the normative group provided the greatest response overall to the pilot questionnaire. Perhaps this is because they were contacted personally. The purpose of including this group was to give a normative view, i.e. what is the most useful and desirable type of environmental disclosure.

Several themes arose from the interested party's responses. The first is "Target-setting". A recurrent theme throughout the responses to the questionnaire, was that the interested parties wanted companies to set measurable environmental targets and objectives. The need for this may be that it is perhaps the first step towards companies discharging their accountability to society and enabling the interested parties to make decisions with respect to the disclosure. Another apparent theme concerns "How do users want environmental information disclosed?". For example, the findings for the question on

financial and environmental information indicated that the interested party group prefer disclosure on a financial and quantitative basis. This suggests that disclosure on more than one basis, for some items, is useful. The "User Sample" is another theme arising from the responses. The pilot questionnaire has confirmed that there are in fact many different users and that they have diverse needs. However, essentially, there seem to be two broad groups of users who can be termed financial and non-financial. "Mandatory Disclosure" was another recurrent theme throughout the responses to the pilot questionnaire. The view was that company environmental disclosure should be made mandatory along the lines of company financial reporting. "Local Environmental Information" was another theme which was very prevalent in the responses. The view of the respondents was, that there should be more local, environmental information available to the public. Again, "Types of Disclosure" presented a theme. From the respondents, 44% preferred quantitative disclosure, 36% preferred qualitative disclosure and 20% preferred financial disclosure.

Lastly, several themes arise from the companies' responses, as follows. Some companies in the sample are producing "environmental information for internal purposes" primarily. In some cases they are passing this to the public. The collation of environmental information, on an internal basis, seems to be a prelude to public disclosure. As an example, the company in the stores sector has produced a separate environmental report for internal use. The point is brought home that this is a management tool and not really available for public disclosure, except to "*bona fide*" parties. In the same vein, the company in chemicals discloses environmental information internally, but there seems some reluctance to disclose such information publicly at the moment. At the other end of the spectrum, the company in food, wholesaling and retail has just begun to disclose

environmental information internally and will disclose publicly in about two years. Following this pattern is the company in hotels and leisure which has disclosed internally for some years and has disclosed publicly for the last two. The result from the sample suggests that most of the companies are at least thinking about environmental disclosure for internal purposes. There seemed to be a pattern of voting by certain companies, suggesting that "environmental disclosure in their area of commerce is not relevant". This can be seen in the voting and comments placed in categories: "none of the above", "non-response", or "others". The companies that followed this pattern were in food wholesaling & retailing, stores and insurance. From the previous two sections it can be seen that not only is there a pattern developing by economic sector but also by whether or not the disclosure is internal or public, suggesting a "disclosure split" by industry. However, it is acknowledged that the sample is too small for such conclusions. A group of companies hold the view that "environmental information is only for management". As a consequence of this, the information is available but only disclosed to the public reluctantly. The question relating to "disclosure type" showed the companies to be most interested in qualitative disclosure (52% favoured this disclosure type, whereas 39% favoured quantitative and 9%, financial). Perhaps qualitative disclosure is the easiest and least verifiable and controversial way for companies to disclose environmental information. However, the normative and interested party groups voted consistently for quantitative disclosure. To conclude, there seem to be patterns emerging for disclosure based on economic sector, and generation of environmental information for management and environmental disclosure to the public. An extension to this work, which was undertaken in the final questionnaire asked companies to differentiate between the type of environmental information used internally, and that

which is disclosed to the public, the idea being that what is generated for internal use is likely to precede public disclosure.

#### **(v) Comparison of Response Themes**

There were several overriding themes which were evident in the responses made by each group. Firstly, with respect to types of disclosure, all three groups placed financial disclosure third. This has serious consequences for the accounting profession, as quantitative disclosure is preferable, for the normative and interested party groups, as is qualitative disclosure for the company group. Secondly, the interested party group, and the normative group, both advocated freedom of information, whereas the company group gave the distinct impression that environmental information was for internal use, and not for public disclosure. The point was made by the companies that it was up to them whether or not they should disclose any information that they may have generated.

Thirdly, the interested party group were pro-mandatory disclosure. However, the company group were of the view that environmental pollution was irrelevant to them. This ties in with the second theme (discussed above) that the view advocated by the company group was that environmental information is for the use of management. Fourthly, the normative group, and interested party group, specified land contamination and the need for more local disclosure of environmental information. The company group did not raise this as a major issue. Lastly, the normative, and interested party, groups often raised the point that there are many stakeholders in a company, and that they all have varying disclosure needs. The company group, as stated in two and four above, held the view that environmental information is for its own use, and gave little



attention to the needs of various stakeholders. This brief analysis provided an overview of the environmental debate, and enough information to clarify the questions to be used in the final questionnaire.

### **5.5.3 Summary**

The completion times for the pilot questionnaire were longer than anticipated, so it was decided to reduce the number of questions. Several changes needed to be made to the design of the questionnaire and these are discussed in section 5.6 in relation to the construction and content of questions in the final questionnaire.

## **5.6 Final Questionnaire Survey**

The final questionnaire design followed the research design established in the pilot questionnaire section. The methodological suggestions of Hoinville *et al.* (1989) and Oppenheim (1992), were also incorporated. However, instead of repeating the procedure, only those points which needed to be altered are discussed.

### **5.6.1 Final Questionnaire Design**

The pilot questionnaire survey played a major role in the development of the final questionnaire design, as several flaws appeared from the pilot analysis, which needed to be eliminated in the final questionnaire. These are discussed in the following two sections: questionnaire construction and questionnaire logistics and response maximisation techniques.

## **(i) Content and Construction of Questions in the Final Questionnaire**

The final questionnaire differed in format from the pilot questionnaire, as a result of the preliminary pilot study and analysis. There were five substantial changes:

- it was decided to introduce sections into the questionnaire, which allowed the subject matter to be dealt with in a concise manner, while keeping a consistent question format;
- the university logo was placed on the front page of the questionnaire as it was felt that this would add credibility to the whole project;
- the appearance of the questionnaire was changed in an effort to make it look more professional, and;
- several questions were omitted, merged, or re-designed.

Two changes to construction, planned for in the original research design, were made for the final questionnaire survey. Firstly, the "others" sections were shortened so that the questions concentrated principally on closed answers. Secondly, ranking was introduced for the propositions in each question. The company pilot questionnaire and final questionnaires for each of the groups can be viewed in appendix C. Other changes arose from the responses to the pilot questionnaire. Firstly, there was a need to introduce sections according to question style, as this would ease completion for the respondents. In relation to content, the question in the pilot which dealt with environmental indicators did not receive sufficient response, therefore it was excluded from the final questionnaire. The analysis of the pilot questionnaire revealed that there was in fact an overlap with several of the questions, so that four questions were reduced to two. The

question in the pilot concerning segmental reporting of environmental information, proved to be of little significance when it was analysed. Again, this question was excluded.

## **(ii) Questionnaire Logistics and Response Maximisation Techniques**

The questionnaire logistics, and response maximisation techniques, adopted were those also used in the pilot questionnaire, with several improvements. The primary mailing of the questionnaire package was on the 23rd June, 1995, with a request for a reply by 6th July. The covering letter can be found in appendix C. The decision was taken not to send reminders until the response began to "fall off". The first reminder was sent on the 17th July, 1995, with a request for a reply by 28th July, 1995. Unlike the pilot survey a whole questionnaire package was again sent. The response began to "fall off" nearer the required response date, so that the second and final reminder was sent on 31st July, 1995, asking for a response by 16th August, 1995. Again, the whole questionnaire package was sent. The actual provisions<sup>9</sup> used were calculated after the survey was completed, and are summarised in table 5.2 below :

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<sup>9</sup>In all 1,830 questionnaire packages were sent which include a covering letter, a questionnaire and a self addressed stamped envelope. First class stamps were used (25p each) which amounted to £900 and paid for from a grant from one of the lecturers on my Ph.D Committee at the University of Manchester. Headed Paper and photo-copying of the questionnaire was provided by the faculty. White envelopes were provide by myself @ £140 (through a University discount scheme). Each letter was printed on an individual basis.

**Table 5.2: Actual Provisions for the Final Questionnaire**

<b>Sample Size 750</b>	<b>Covering Letters</b>	<b>Questionnaires</b>	<b>Envelopes</b>	<b>Stamps</b>
Primary Mailing	750	750	1,500	1,500
Less: Response 20%	(150)	(150)	(300)	(300)
First Reminder	600	600	1,200	1,200
Less: Response 20%	(120)	(120)	(240)	(240)
Second Reminder	480	480	960	960
<b>Total Amount</b>	<b>1,830</b>	<b>1,830</b>	<b>3,600</b>	<b>3,600</b>

There were also 300 telephone calls made to the companies, to confirm the addressee for the final questionnaires, and the distribution of an analysis of the results to 350 of the respondents.

### **5.6.2 Sample Specification for the Final Questionnaire**

The research design, established in the pilot questionnaire, was repeated for the final questionnaire. This section discusses the specification of the final sample, and summarises the procedure for the analysis of responses. The main purpose of the questionnaire was to compare the attitudes of each group, with respect to particular issues. The sample size for each group was 250, the overall sample size being 750.

#### **(i) The Normative Sample for the Final Questionnaire**

The normative group falls into two sub-samples: environmental consultants and advisors. The environmental consultants' sub-sample was sourced from the "Directory of Environmental Consultants" (1992/93) which provides comprehensive details of 339 organisations offering environmental consulting services. Only consultancies involved

in advising on corporate environmental strategy, and/or corporate environmental policy, were selected. This amounted to 100 organisations, each of which had some experience in the 18 consulting service areas used in the Directory of Environmental Consultants.<sup>10</sup> The growth area for the environmental consultancies has been dealing with the Environmental Protection Act (1990) on behalf of clients. Water pollution and contaminated land constitute 30% of their workload, with environmental policy and corporate environmental strategy representing only 6% (see Directory of Environmental Consultants, 1992/93). These figures indicate that environmental policy, and corporate environmental strategy, do not provide a substantial amount of income for the consultancies, in relation to other areas.

The advisors were drawn from the Directory of the Environment (1994). It was difficult to define an advisor, however the Directory contained lists which classify environmental organisations into groups according to their individual key concerns. The construction of the advisor sub-sample was challenging, as limited resources meant that the organisations could not be contacted on an individual basis before sending the questionnaire, to check whether or not they fitted the definition of an advisor, for the current purposes. The criterion for selection was based on a definition of advisors, as organisations which specialise in offering advice to companies, and the public, on environmental, among other, issues. These include educational institutions, professional bodies, trade associations, industry associations, local government bodies, quangos, and government departments. Some members of these organisations have environmental agendas which, when aggregated, could be said to represent the "environmental ethos"

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<sup>10</sup> These are: central government, local government, mining/quarrying, oil/chemical, mechanical engineering, other manufacturing, food and drink, construction, water, energy, transport, retail and commerce, waste management, tourism, international bodies, consultancies, voluntary bodies, and others.

(see section 3.4(i)). A random<sup>11</sup> sample, amounting to 150, was chosen. The reason for this group containing a greater number than the environmental consultant sample was to obtain a sufficient and statistically viable response, as the difficulty of establishing selection criteria could reduce the response in this sample. This approach was justified, as 12 of the advisor respondents felt that it was inappropriate for them to complete the questionnaire, and 33 stated that the questionnaire was irrelevant to their organisations (see table 5.3, part A).

**Table 5.3: Descriptive Statistics  
Normative Group: Questionnaire Response and Completion Times**

**Part A: Response**

	Number		Percentage	
<b>Original Sample Size</b>	<b>250</b>		<b>100.0</b>	
<b>Less:</b> Adjustments				
<b>Reason:</b> Change of Address	23		9.2	
Questionnaire Not Relevant	33	(56)	13.2	(22.4)
<b>Total Adjusted Sample Size</b>	<b>194</b>		<b>77.6%</b>	
<b>Adjusted Sample Size</b>	<b>194</b>		<b>100.0</b>	
<b>Less:</b> Non-Usable Response				
<b>Reason:</b> Did Not Understand Questionnaire	4		2.1	
Inappropriate to Complete	12		6.2	
Insufficient Time / Resources	28	(54)	14.4	(22.7)
<b>Total Response</b>	<b>150</b>		<b>77.3</b>	
<b>Less:</b> Non-Response	(59)		(30.4)	
<b>Total Usable Response</b>	<b>91</b>		<b>46.9%</b>	

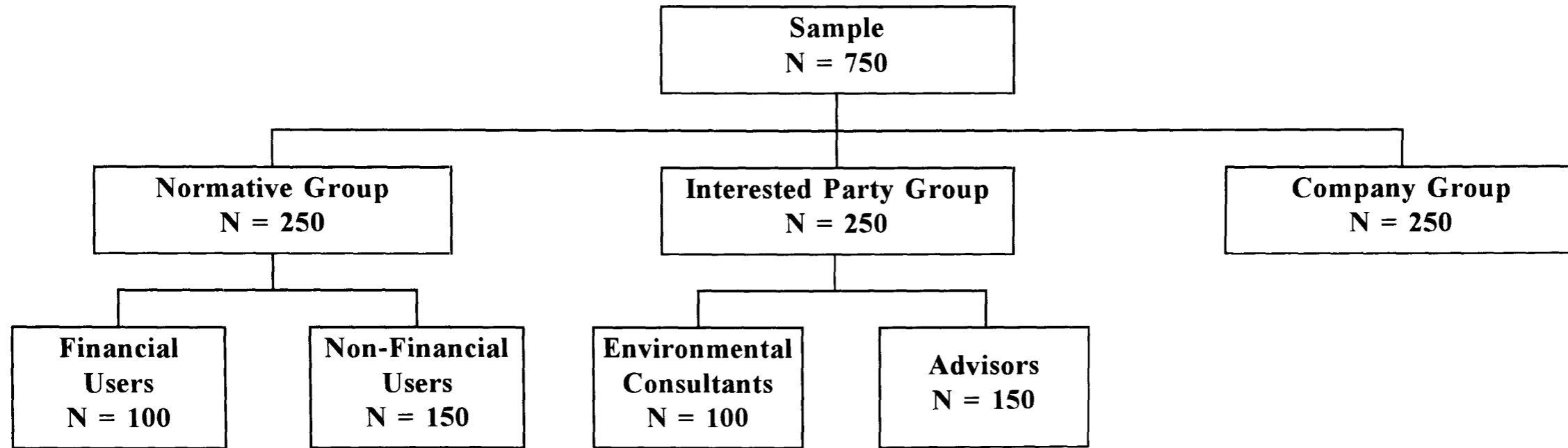
**Part B: Completion Times**

N	Mean	S.D.	Median	Mode	Minimum	Maximum	Range
76	29.38	8.81	28.00	35.00	9.00	60.00	51.00

<sup>11</sup> The selection process involved the use a random number generator found on the Minitab software. The random numbers generated were on a uniform basis, which gave each number an equal opportunity of selection (without replacement).

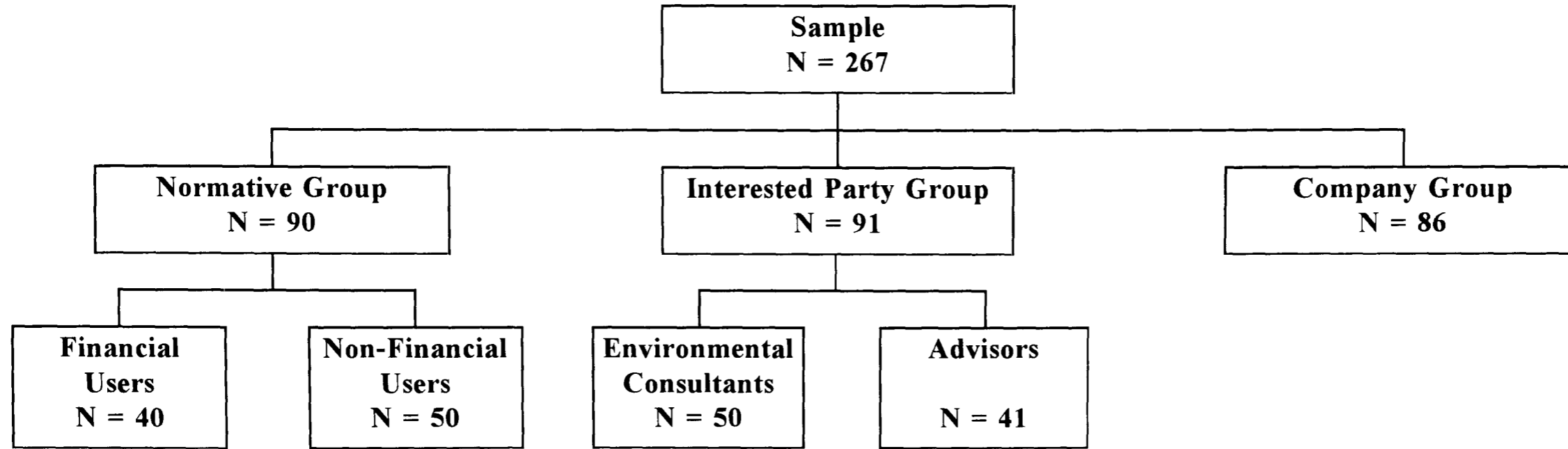
The structure of the questionnaire sample can be seen in diagram 5.1. This representation summarises the breakdown of the various groups which constituted the sample. Diagram 5.2 summarises the final response rates, which as discussed in section 5.2.2, is an important issue in the validity of the questionnaire methodology. The analysis of responses used non-parametric statistics (see section 5.3). For the normative group as a whole, the adjusted response rate was 46.9% (adjusted for change of address and irrelevance of questionnaire, see table 5.3, part A). The respondents were asked to indicate the amount of time it had taken them to complete the questionnaire and the results to this can be seen in table 5.3, part B. The mean completion time was within the expected 30 minutes. Kruskal-Wallis tests (see section 5.3) were also carried out to check for late response bias. The null hypothesis was that there was no difference between three sets of responses to each question. The three sets were created by splitting the responses according to reminder dates. The null hypothesis was not rejected on the whole, indicating that there was no late response bias. The biographic details of the respondents were also considered to ensure that the group is a representative sample. The largest proportion of respondents were environmental consultants (48.8%, see table 5.4, part A). The second largest group was involved in education (23.8%). Of the respondents, 60.2% (see table 5.4, part B) were either directors or managers. This evident seniority of the individual respondents inspires confidence in the results as they are likely to have more in-depth knowledge concerning the subject matter of the questionnaire, in relation to their organisations and agendas. Furthermore, 82.1% of these individuals have been working within their respective organisations for at least 3 years (see table 5.4, part C). This emphasises their long-term and close relationship with their organisation.

**Diagram 5.1: The Structure of the Questionnaire Sample**





**Diagram 5.2: The Usable Response to the Final Questionnaire**



**Table 5.4: Descriptive Statistics**  
**Normative Group: Biographic Details of Respondents**

**Part A: Type of Organisation**

	<b>Percentage Frequency</b>
Environmental Consultants	48.8
Education	23.8
Professional Organisation	10.6
Trade Association	6.0
Industry Association	4.8
Local Government	2.4
Quango	2.4
Central Government	1.2
<b>Total</b>	<b>100.0%</b>

N = 84

**Part B: Position in Organisation**

	<b>Percentage Frequency</b>
Director	44.3
Manager	15.9
Consultant	12.5
Administrator	5.7
Policy Advisor	5.7
Senior Research Officer	5.7
Senior Environmental Specialist	4.5
Partner	3.4
Assistant Director	2.3
<b>Total</b>	<b>100.0%</b>

N = 81

**Part C: Length of Employment with Present Organisation**

	<b>Percentage Frequency</b>
Less than 1 year	4.5%
Between 1 to 3 years	13.5%
Between 3 to 5 years	31.5%
Over 5 years	50.6%
<b>Total</b>	<b>100.0%</b>

N = 89

To summarise, the response rate is similar to that of other questionnaire surveys in Accounting and Finance.<sup>12</sup> The biographic details confirm that a broad spectrum of organisations is represented by the sample, and that the respondents have held senior positions in their organisations for some time, inspiring confidence in their ability to complete the questionnaire in a meaningful way. Lastly, the homogeneity of the normative group (i.e. the homogeneity of the sub-samples) is discussed in relation to limitations to the research in section 5.7.4.

### **(ii) The Interested Party Sample for the Final Questionnaire**

To develop the interested party<sup>13</sup> sample two sub-groups were collated consisting of both financial users and users. The financial user sample was sourced from the City Directory (1990), an "Independent Guide to Ethical and Green Investment Funds" (Holden Meehan, 1994) and from the Ethical and Investment Research Service (EIRIS) which provided a list of fund managers and independent financial advisers. A substantial list of financial users was compiled and a random sample of 100 was selected.

The sample for the non-financial users was drawn from the Directory of the Environment (1994) and included environmental pressure groups, research bodies, statutory bodies, professional organisations, and the media, to name but a few. The classifications used by the publication were used as an indication of whether or not environmental information was used by the organisations. The directory provided a

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<sup>12</sup> For example, Joseph and Hewins (1996) had a usable response rate of 31%, and Bebbington *et al.* (1994) had a usable response rate of 18%.

<sup>13</sup> The term "interested party" was applied in order to incorporate financial users and users, in an appropriate manner.

profile of each organisation's aims and activities from which a large users list was compiled, and a random sample of 150 users was drawn. The sample was larger than for financial users since, without contacting each organisation individually, it was impossible to ascertain with confidence whether or not the organisation had any need for corporate environmental disclosure, thereby catering for a margin of error. The sample for this group amounted to 150, for the same reasons as the larger advisor sample. Approaching a larger sub-sample was justified as over 20 of the user respondents replied stating that the questionnaire was not relevant to their organisational needs.

The total adjusted response rate (see table 5.5, part A) was 44.4%, which is comparable to the response for the normative group. The respondents were also asked to indicate their questionnaire completion time (see table 5.5, part B). Again, as for the normative group, the average time of completion was within the anticipated 30 minutes. Kruskal-Wallis tests were conducted to test for late response bias and the results showed no response bias according to different dates of arrival. In relation to the respondent's biographic details, the largest respondent group (see table 5.6, part A) comprised pressure groups (20%), followed by independent financial advisors (17.5%). Of the respondents, 15.3% were directors and 12.8% were investment researchers. Over 95% of the respondents held senior positions in their respective organisations (see table 5.6, part B). Furthermore, over 60% had been associated with these organisations for over three years (see table 5.6, part C).

**Table 5.5: Descriptive Statistics  
Interested Party Group: Questionnaire Response and Completion Times**

**Part A: Response**

	<b>Number</b>		<b>Percentage</b>	
<b>Original Sample Size</b>	<b>250</b>		<b>100.0</b>	
<b>Less:</b> Adjustments				
<b>Reason:</b> Change of Address	12		4.8	
Questionnaire Not Relevant	35	(47)	14.0	(18.8)
<b>Total Adjusted Sample Size</b>	<b>203</b>		<b>81.2%</b>	
<b>Adjusted Sample Size</b>	<b>203</b>		<b>100.0</b>	
<b>Less:</b> Non-Usable Response				
<b>Reason:</b> Did Not Understand Questionnaire	7		3.4	
Inappropriate to Complete	10		4.9	
Insufficient Time / Resources	11	(28)	5.4	(13.7)
<b>Total Response</b>	<b>175</b>		<b>86.3</b>	
<b>Less:</b> Non-Response	(85)		(41.9)	
<b>Total Usable Response</b>	<b>90</b>		<b>44.4%</b>	

**Part B: Completion Times**

<b>N</b>	<b>Mean</b>	<b>S.D.</b>	<b>Median</b>	<b>Mode</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Range</b>
75	28.55	13.24	25.00	20.00	10.00	90.00	80.00

**Table 5.6: Descriptive Statistics**  
**Interested Party Group: Biographic Details of Respondents**

**Part A: Type of Organisation**

	<b>Percentage Frequency</b>
Pressure Group	20.0
Independent Financial Advisor	17.5
Fund Managers	12.6
Education	11.3
Research Body	7.5
Bank	7.4
Political Body	6.3
Insurance	3.8
Statutory Body	3.8
Charity	2.4
Professional Body	2.4
Public Body	2.4
Local Government	1.3
Media	1.3
<b>Total</b>	<b>100.0%</b>

N = 80

**Part B: Position in Organisation**

	<b>Percentage Frequency</b>
Director	22.4
Investment Researcher	15.2
Co-Ordinator	11.8
Senior Manager	10.6
Administrator	8.2
Partner	8.2
Section Head	7.1
Head of Credit	4.7
Projects Officer	4.7
Volunteer	4.7
Chief Inspector	1.2
Consultant	1.2
<b>Total</b>	<b>100.0%</b>

N = 85

**Part C: Length of Employment with Present Organisation**

	<b>Percentage Frequency</b>
Less than 1 year	9.2%
Between 1 to 3 years	27.6%
Between 3 to 5 years	16.1%
Over 5 years	47.1%
<b>Total</b>	<b>100.0%</b>

N = 87

### **(iii) The Company Sample for the Final Questionnaire**

Unlike the other groups, the company group for the final questionnaire was sourced from a different place from the pilot questionnaire sample. The pilot sample used the FT100. However, problems were perceived with this index. Firstly, it was not large enough for the full sample. Even if the full FT-All Share index was used, there was an underlying problem in that large, private companies and companies not quoted on the UK stock market, but present in the UK, would not be included in the sample. However, the Times produces a list (see Times 2000, 1995) of the "top"<sup>14</sup> 1000 companies in Britain which includes private companies such as IBM, the John Lewis Partnership, McDonalds, Procter and Gamble, as well as nationalised industries and government agencies, such as the Post Office. This therefore seemed a more appropriate basis for sample selection, as it provided a wider definition of the top companies in the British economy. The period covered extended from 1st January, 1993 to 31st May, 1994. During this time, British Petroleum had the highest turnover of £47,655 million, and EuroDollar (UK) Ltd. represented the lowest turnover of the top 1000 companies, with just over £75 million. It was decided to use the Times 1000. This represents the largest 1000 companies in the UK, both private and public. The selection process involved numbering each one of the companies, according to turnover rank. The software, "Minitab" was then used to generate a set of 250 random numbers from a sample of 1 to 1000. This allowed selection of 250 companies from the initial 1000. A random sample of 250 companies was taken. Each company was contacted by telephone so as to track down the most appropriate person to whom the questionnaire could be addressed. Some companies would not disclose a name, and suggested that any correspondence be addressed to the

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<sup>14</sup> The term "top" 1000 companies refers to turnover.

company secretary. Several companies were simply holding companies, with totally devolved subsidiaries. Some of these holding companies had no involvement with environmental disclosure at corporate level, and suggested contacting a subsidiary. Other holding companies had some interest at a corporate level but still suggested contacting a subsidiary.<sup>15</sup>

The result of this was that the total usable response rate, to the mail questionnaire, was 37.7% (see table 5.7, part A). Of the respondents, 14% were not listed on the UK stock market. An adjustment was made of 22 companies which had a policy of not completing questionnaires. This left a sample of 228. Several reasons were given, by companies, for not participating in the survey, which were comparable to those given by the other two groups. The mean completion time for the questionnaire was 31 minutes (see table 5.7, part B).<sup>16</sup>

As with the previous groups, biographic details of the respondents were considered and table 5.8 part A provides a listing of the industrial sector of each company in the survey, which indicates the cross section of responses by industry, showing that 24 industrial sectors (as defined by the Times) are represented. The professional position of the respondents in their companies can be seen in table 5.8, part B. The vast majority of the respondents (over 97%) were either directors or managers. Also, over 70% of the respondents (see table 5.8, part C) have been with their respective companies for over five years. From the telephone enquiries, the respondents' addresses were established

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<sup>15</sup> The process of establishing the addressees involved telephoning companies in a two shift system, 10am to 12 noon and 2pm to 4pm for two weeks.

<sup>16</sup> However, this is not comparable to the completion times for the other two groups, as there were two more ranked questions, and two open-ended questions each with three parts. However, the average still falls within the expected completion time.



**Table 5.7: Descriptive Statistics  
Company Group: Questionnaire Response and Completion Times**

**Part A: Response**

	Number	Percentage
<b>Original Sample Size</b>	<b>250</b>	<b>100.0</b>
<b>Less:</b> Adjustment		
<b>Reason:</b> Company Policy Not to Complete	(22)	(8.8)
<b>Total Adjusted Sample Size</b>	<b>228</b>	<b>91.2%</b>
<b>Adjusted Sample Size</b>	<b>228</b>	<b>100.0</b>
<b>Less:</b> Non-Usable Response		
<b>Reason:</b> Unable to Complete Questionnaire	9	4.0
Questionnaire Not Relevant	11	4.8
Inappropriate to Complete	6	2.6
Insufficient Time / Resources	22	(48)
	9.7	(21.1)
<b>Total Response</b>	<b>180</b>	<b>78.9</b>
<b>Less:</b> Non-Response	(94)	(41.2)
<b>Total Usable Response</b>	<b>86</b>	<b>37.7%</b>

**Part B: Completion Times**

N	Mean	S.D.	Median	Mode	Minimum	Maximum	Range
76	31.63	13.35	30.00	25.00	10.00	100.00	90.00

which allowed differentiation between parent companies and subsidiaries, in order to have some indication of the distribution of companies responding to the questionnaire. Table 5.9 indicates that 77.6% of the companies were parent and 22.4% were subsidiaries. Also, the results show that 84.7% of the parent companies have a corporate environmental policy and/or strategy, and that 53% of the subsidiary companies indicated that they have a company environmental policy and/or strategy. The results thus indicate that 7.1% of the companies which responded had both a corporate and subsidiary company environmental policy and/or strategy. Of particular interest is that 72.9% of the individuals, within the sample, had responsibility for public environmental

**Table 5.8: Descriptive Statistics**  
**Company Group: Biographic Details of Respondents**

**Part A: Type of Company**

<b>Industrial Sector</b>	<b>Percentage Frequency</b>
Food Manufacturing	10.0
Oil, Gas, & Nuclear Fuels	10.0
Building Materials & Services	7.2
Chemicals	7.2
Transport Services	7.2
Food Wholesaling & Retailing	5.8
Health & Household	5.8
Water	5.8
Engineering-General	4.3
Stores	4.3
Transport-Manufacture & Distribution	4.3
Business Services	2.8
Contracting, Construction	2.8
Electricity	2.8
Hotel & Leisure	2.8
Metal & Metal Forming	2.8
Mines	2.8
Other Industrial Materials & Products	2.8
Packaging Paper & Printing	2.8
Agriculture	1.4
Commodities Trading	1.4
Electronics	1.4
Property	1.4
<b>Total</b>	<b>100.0%</b>

N = 70

**Table 5.8 continued****Part B: Position in Company**

	<b>Percentage Frequency</b>
Environment Manager	25.3
Environmental Advisor	14.5
Health Safety & Environment Manager	13.4
Facilities Manager	6.0
Product Manager	6.0
Technical Manager	4.8
Head of Business Planning	3.6
Company secretary	3.6
Compliance Manager	3.6
Director Safety & Quality	3.6
Environmental Information Manager	3.6
Deputy Chairman	2.4
Director of Environmental Services	2.4
Director	2.4
Head of Group Personnel	2.4
Management Trainee	2.4
<b>Total</b>	100.0%

N = 83

**Part C: Length of Employment with Present Organisation**

	<b>Percentage Frequency</b>
Less than 1 year	5.9%
Between 1 to 3 years	12.9%
Between 3 to 5 years	9.4%
Over 5 years	71.8%
<b>Total</b>	100.0%

N = 85

**Table 5.9: Descriptive Statistics**  
**Company Group: Corporate and Subsidiary Company Information**

	N	Percentage
1. Parent company.	85	77.6
2. Subsidiary company.	85	22.4
3. Corporate environmental policy and / or strategy.	85	84.7
4. Company environmental policy and / or strategy.	15	53.0
5. Individual with responsibility for public environmental disclosure.	85	72.9

disclosure. These results would suggest that the majority of companies which responded have a specific interest in environmental issues, thereby indicating that the results represent current practice. A further interpretation of the response rates is presented in table 5.10, parts A and B. Here, the turnover of the companies in the sample is depicted. The table is divided into two parts separating the parent companies in the survey from subsidiary companies. As can be seen, the subsidiaries of some companies are larger than some parent companies found in the Times 1000. This is shown by the relatively large standard deviation in table 5.10, part B.

**Table 5.10: Descriptive Statistics**  
**Company Group: Turnover**

**Part A: Corporate Turnover**

Mean £,000	S.D. £,000	Median £,000	Minimum £,000	Maximum £,000	Range £,000
2,346,000	7,343,000	586,000	76,000	47,655,000	47,579,000

N = 42

**Part B: Subsidiary Company Turnover**

Mean £,000	S.D. £,000	Median £,000	Minimum £,000	Maximum £,000	Range £,000
637,000	1,069,000	320,000	18,000	4,500,000	4,482,000

N = 17

Overall, the sample represents a selection of the largest companies operating in the United Kingdom within a variety of industrial sectors. The response rate is consistent with other questionnaire surveys in accounting and finance, although slightly less than those in chapters five and six. The biographic details of the respondents revealed that they were consistent with a profile for respondents required: they held senior positions and had been with their respective companies for a number of years.

### **5.6.3 Summary**

The research design for the final questionnaire was based on that developed for the pilot questionnaire. As indicated, several improvements were made to questions and the questionnaire design as a result of the pilot survey. The larger sample of the final questionnaire allowed statistical tests to be used in order to discuss the results and these are seen in the following chapters.

## **5.7 Limitations to the Methodology Adopted**

A number of limitations, established in the literature, relating to questionnaire design, particularly response maximisation techniques were discussed in section 5.2. Techniques of avoiding problems with questionnaire design have been incorporated into the research design, as discussed throughout this chapter. However, there are several other areas which represent limitations of the research methodology adopted including: combining normative and positive approaches; combining different "realities" and attempting to obtain a consensus from them, and; the limitations of sample selection and data analysis.

### 5.7.1 Combining Normative and Positive Approaches

The conceptual frameworks within the "empirical cluster" suggested in chapter two combine both normative and positive research. This is undertaken by considering current practice - i.e. positive research, and by suggesting ways to improve practice - i.e. normative research. This is exemplified in the discipline of nursing. Orem (1971) suggests that patients should take on more responsibility for their own care (a normative statement). Anna *et al.* (1978) test Orem's conceptual framework empirically in a nursing home. This combination of normative and positive approaches was not perceived as a limitation. In marketing, Huegy (1963) and Kasouf *et al.* (1995) suggest that their conceptual frameworks, which are normative, should be tested empirically in order to ascertain their validity. Fawcett (1997) lists several normative nursing conceptual frameworks which have been empirically tested.

In a philosophical context, the normative approach may be equated with a deductive style of reasoning, whereas the positive approach coincides with an inductive style of reasoning (see a discussion of these approaches in relation to conceptual frameworks in section 2.3). It has been suggested that in empirical work, these two approaches are not independent incompatible approaches but are instead used in tandem. Darnell and Evans consider that for empirical work in economics (a social science) (1990, page 26):

"Deduction and induction are both styles of reasoning used extensively in economics. They are not, however, polar positions but are intimately related to one another and both styles have, individually and jointly, exerted a marked influence on economic thought. Within the method of applied econometrics, though not necessarily within economic theory, the two approaches are fused."

In the empirical research applied in this thesis, there should also be no inconsistency in combining a normative and positive approach. Indeed it is possible to suggest that in an

empirical investigation, the two approaches merge into one, and this one may be considered to be normative. In other words, one reality is that there is actually only one empirical research methodology, i.e. normative, and that positivism is a part of normative research. It can be suggested that, from the perspective of this thesis, "positive" research is only a result of the imposition of the "big stick" (see section 3.1) on other members of society. Even though the findings from the questionnaire can be seen as the result of positive research, the interpretation of these findings and their incorporation into the conceptual framework model may be seen to be normative, as the researcher is the interpreter.

There is another level at which it might be suggested that this research combines normative and positive approaches in the questions to the company respondents and the analysis of the three groups. The questionnaires to the normative and interested party respondents are completely normative in nature, as they ask the respondents what they consider should be disclosed and what they would like disclosed in relation to corporate environmental reporting. On the other hand, for the company questionnaire, the sections entitled "Company Environmental Information" and "Environmental Reports and Reporting" (see appendix C) ask the respondents what their companies actually disclose, in other words what is their corporate environmental reporting practice. This represents a positive approach. The section entitled "Attitudes towards Company Environmental Disclosure" (see appendix C) asks the respondents for their views regarding corporate environmental reporting. This represents a normative approach. However, in trying to obtain a consensus between the three groups, there are limitations to the analysis which need to be acknowledged. In comparing the views of the company respondents to those of the other two groups, it is necessary to realise that normative and positive approaches

are being combined. To compare the responses, the assumption can be made that what the company management do in practice is also what they want/would like to do. This is not necessarily the case. However, given the "big stick" argument (see section 3.2) is it reasonable to assume that in a voluntary reporting environment company management is having its freedom curtailed? The approach taken for the research is that asking the company respondents what they believe their companies disclose is an acceptable surrogate for asking them what they would like to disclose. This arises from an accepted limitation of questionnaire methodology in that if a respondent from an organisation is asked for his/her views then he/she is likely to provide the "company line", rather than personal, normative views. Therefore, it seems almost impossible to differentiate between positive and normative questions and responses for the company questionnaire, whereas the other two groups concern themselves mainly with their subjective requirements. However, even with the normative and interested party groups, how can we be sure that they are representing their organisations or their own personal views? These are all limitations which are inevitable in the form of qualitative research applied in this thesis.

### **5.7.2 Combining Different Realities and Attempting to Obtain a Consensus from Different Realities**

The theoretical development of the three major respondent groups used in the questionnaire survey was discussed in detail in section 5.4.3. As discussed in section 3.2, individuals and groups create their own "realities" and therefore each group approached in this survey is likely to possess a different reality for corporate environmental reporting. The question is how different are they? If a questionnaire addresses only one



homogeneous group of respondents, then the problems of combined realities would not arise, except for the realisation that at an individual level, every person has a different reality. However, approaching only one group of respondents would not be useful when the aim of the research is to explore and investigate the differences in attitude towards corporate environmental reporting between major groups, in order to test empirically a conceptual framework, which makes the implicit relationships between major groups in society explicit. Therefore, for this thesis the differing realities of three groups are canvassed and then combined. An evident limitation to any questionnaire survey is the existence of these differing realities and this limitation has to be accepted in relation to the current thesis. In fact, as well as presenting a limitation to the work, it is the very existence of difference in realities which provides the basis for testing the conceptual framework for corporate environmental reporting developed in chapter four. In chapter nine, the different realities are compared using statistical tests and a consensus is obtained which is assumed to represent the lowest common denominator for corporate environmental reporting. In other words, a consensus between these three groups represents a common level of reality where all three perspectives meet. A further complication arises from the fact that each of the major three groups comprises a number of sub-groups. The rationale for including these sub-groups was discussed under group development in section 5.4.3. The inclusion of these different types of respondents in the groups is considered in practice through data analysis in the following section.

### **5.7.3 The Limitations of Sample Selection and Data Analysis**

Although the three respondent groups have been discussed in terms of group development and sample selection, there are limitations to the sample selection process

and to the analysis of the sample responses which must be considered. This section considers two substantial limitations and discusses to what extent they apply to the current thesis. These are: the problem of whether or not the respondents are truly representative of the populations they are meant to represent, and; the problem of homogeneity of the samples.

### **(i) Are the Respondents Representative of their Populations?**

From a statistical viewpoint, it is important that the sample of respondents to a questionnaire can be assumed to be representative of the populations which they are supposed to represent. For clarification purposes, a population is defined as (Jaeger, 1990, page 138) :

"... any collection of objects or entities that have at least one characteristic in common".

The three major groups used in this research, the normative, interested party, and company groups, may clearly be treated as populations. In section 5.4.3, where the group development and group meaning in theory are discussed, it is evident that the groups are each characterised by at least one characteristic: all members of the normative group provide a normative view on corporate environmental reporting; all members of the interested party group use corporate environmental reporting, and; all members of the company group are potential producers of corporate environmental information.

However, the next step is to be sure that the samples selected for the final questionnaire may be considered representative of the populations from which they are derived. In terms of definition, a sample is (Jaeger, 1990, page 139) :

"... a part of a population"

However, as Jaeger (1990) points out, samples can only be useful for statistical work, if they are representative of the populations from which they are drawn. Representative, in this specific sense, means that the empirical findings for the sample may be considered to represent, or be the same as, the empirical findings which would arise were the whole population surveyed. Therefore, it is only a "probability sample" which is useful for statistical analysis, not any "sample". Jaeger states that for a sample to be a "probability sample" then firstly, every person (or entity) within the sampling population must have some chance (although not necessarily the same chance) of being a member of the sample. Secondly, for a sample to be representative of its population, the population must be defined so well that it can be stated without question whether or not any particular member of a sample derives from the population.

In relation to the first criterion for a probability sample, the random method used in the current research for selecting the samples from their three populations (see section 5.6.3) should have ensured that the samples are true population samples, which may be considered to be representative of their groups, or populations. Also, in relation to the second criterion, the theoretical group development in section 5.4.3 provides the necessary definitions of group meaning which allows this to be fulfilled. Therefore, given the inevitable limitations of sampling, it can be assumed that the samples used for this research are representative of the populations they are said to represent.

As the samples selected for the questionnaire are, according to Jaeger's definition, "population samples", then any sub-sample of respondents to the questionnaire should also represent "population samples" and therefore should be representative of their populations.

## **(ii) Homogeneity or Heterogeneity of Sub-Samples**

In section 5.4.3, group development and group meaning were discussed for the three major groups surveyed (normative, interested party and company). The discussion considered how the various sub-groups comprising each of these three major groups could, theoretically at least, be seen as formulating one homogeneous group. However, in practice, is each of the three respondent groups really homogeneous, or do their constituent sub-samples have significant differences in opinion? In this section, the results from a series of Kruskal-Wallis tests are presented which show that overall each of the respondent three groups may be considered to be homogeneous.

The analysis considers each group in turn, starting with the normative group. Within each group, several different types of Kruskal-Wallis test are performed.<sup>17</sup> Two-sample tests are used to discover whether or not the two major sub-samples of respondents within the normative and interested party groups come from the same population. Also, two sample tests are used to test the homogeneity of each smaller sub-sample against the rest of the overall group. Then larger sample tests are performed which compare all the sub-samples' responses against each other. For the company group, the responses for each industry are compared to those from the rest of the company group, and a test is also run to compare the responses of all the different industries against each other.

Tables are used to present the significant results to these tests. In each case, the proportion of significant results to the tests is given in percentage terms by subtracting

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<sup>17</sup> For each different set of tests, all parts of the questionnaire are tested. This means that for each set of tests, 274 tests were run for the normative and interested party groups, and 343 tests were run for the company group (as there are more questions in this questionnaire).

this figure from 1, the proportion of homogeneity, or overall agreement for the respective set of tests may be found. Also, the actual propositions where the sub-sample respondents' views differ are expressed. In the two-sample tests, the direction of significant disagreement is given, showing whether the sub-sample is responding with higher or lower scores overall.

### *The Normative Group*

*Kruskal-Wallis Tests for Each Sub-sample within the Normative Group Against the Rest of the Normative Group:* Table 5.11 presents the significant statistics for these tests. The sub-sample with the largest proportion of significant statistics, indicating disagreement with the rest of the normative group, was education. However, these areas of disagreement only represent 6.6% of the 274 tests run (i.e. of the propositions in the questionnaire). Another sub-group which showed disagreement with the rest of the normative group was industrial associations (95.3% agreement). The direction of the statistics for both of these sub-groups indicates that they are both recording higher scores than the rest of the respondent group. This indicates that they attach more importance to issues of corporate environmental reporting than the rest of the respondents in the normative group. Two of the sub-groups demonstrated 100% agreement with the rest of the normative group.

*Kruskal-Wallis Tests of All Normative Group Sub-Samples Against Each Other:* Table 5.12 presents the results for a series of eight-sample Kruskal-Wallis tests which compare the responses of each sub-sample within the normative group against each other. The results overall indicate a 92.7% agreement between all the sub-samples of respondents.

**Table 5.11: Kruskal-Wallis Tests for Each Sub-Sample within the Normative Group Against the Rest of the Normative Group**

<b>Sub-Sample</b>	<b>Significant Tests (%)</b>	<b>Propositions (1% Significance Level)</b>	<b>KW Statistic</b>	<b>Direction</b>
<b>Education</b>	6.6	3.2 Environmental policy statement (quantitative)	10.542	SS>S
		3.3 Environmental strategy statement (quantitative)	6.817	SS>S
		5.5 Environmental information that may reduce financial performance (qualitative)	6.996	SS<S
		7.1 Legal compliance (qualitative)	6.954	SS<S
		8.6 Donations to environmental charities (financial)	10.985	SS>S
		8.6 Donations to environmental charities (quantitative)	9.042	SS>S
		10.3 Local authority (assess impact)	7.297	SS>S
		10.3 Local authority (report impact)	11.056	SS>S
		10.5 Central government (report impact)	6.704	SS>S
		11.3 Stand alone published environmental company report every 3 months	7.853	SS<S
		11.4 Stand alone published company environmental report every 6 months	7.108	SS<S
		12.10 Environmental groups	9.462	SS>S
		12.12 Central government	11.431	SS>S
		12.14 Local government	11.237	SS>S
		12.3 Local communities	18.223	SS>S
		14.9 Freedom from error	7.281	SS<S
		16.1 Accountants within their existing framework	6.913	SS>S
		16.2 Scientists within their existing framework	7.650	SS>S
		<b>Professional Organisations</b>	2.6	13.1 The company should absorb the full cost
13.4 The government via a system of company tax credits	7.560			SS>S
15.1 Air	17.447			SS<S
15.2 Land	16.888			SS<S
15.3 Water	16.871			SS<S
16.3 Environmental consultants within their existing framework	9.481			SS<S
19.2 From company head office and at site/branch level	12.338			SS<S

**Table 5.11 continued**

<b>Sub-Sample</b>	<b>Significant Tests (%)</b>		<b>Propositions (1% Significance Level)</b>	<b>KW Statistic</b>	<b>Direction</b>
<b>Industrial Associations</b>	4.7	11.2	Environmental information within the published company annual report plus the half yearly interim statement	8.095	SS>S
		12.9	Industry associations	6.660	SS>S
		14.11	Neutrality	7.427	SS>S
		14.12	Prudence	12.241	SS>S
		14.13	Completeness	12.049	SS>S
		14.14	Comparability	6.885	SS>S
		14.15	Consistency	7.172	SS>S
		17.5	As a result of company ethics	7.503	SS>S
		17.8	To acknowledge social responsibility	7.835	SS>S
		17.12	To meet the demand for environmental information	10.784	SS>S
		18.12	Users may not understand the information	6.896	SS>S
		19.2	From company head office and at site/branch level	8.111	SS>S
		19.3	Only at site/branch level	8.516	SS<S
	<b>Local Government</b>	0.0	-	None	-
<b>Quango</b>	0.4	10.2	Independent consultants - paid by company (assess impact)	7.441	SS<S
<b>Central Government</b>	0.0	-	None	-	-

The second column indicates the proportion (in %) of the total tests run which were significant at a 1% level. In the last column, SS>S indicates that the responses from the sub-sample were higher than those from the rest of the respondent group, whereas SS<S indicates that the responses from the sub-sample were lower than those from the rest of the respondent group.

**Table 5.12: Kruskal-Wallis Tests of all Normative Group Sub-Samples Against Each Other**

<b>Sub-Sample</b>	<b>Significant Tests (%)</b>	<b>Propositions (1% Significance Level)</b>	<b>KW Statistic</b>
<b>7 Sub-Samples</b> (plus an anonymous group)	7.3	3.2 Environmental policy statement (quantitative)	21.036
		3.3 Environmental strategy statement (quantitative)	24.291
		4.3 Water consumption (quantitative)	21.288
		8.6 Donations to environmental charities (quantitative)	19.569
		9.5 Accident and emergency response (qualitative)	21.858
		9.7 Environmental integration of business (qualitative)	20.544
		11.2 Environmental information within the published company annual report plus a half yearly interim statement	20.443
		11.3 Stand alone published environmental company report every 3 months	23.109
		11.4 Stand alone published environmental company report every 6 months	25.187
		12.3 Local communities	20.015
		12.10 Environmental groups	25.582
		12.11 Media	19.498
		12.12 Central government	21.925
		14.14 Comparability	18.749
		15.1 Air	25.195
		15.2 Land	23.797
		15.3 Water	25.228
16.3 Environmental consultants within their existing framework	23.897		
18.1 Reluctance to report sensitive information	18.897		
19.2 From company head office and at site/branch level	22.805		

The second column indicates the proportion (in %) of the total tests run which were significant at a 1% level.



*Kruskal-Wallis Tests of the Two Main Sub-Samples (Environmental Consultants and Advisors) within the Normative Group:* Table 5.13 again shows major agreement of 93.4% between these two sub-samples. Overall, the environmental consultants record higher scores than the advisors, for most of the significant propositions, indicating that the environmental consultants require more reporting in these specific areas than the other main group. However, these significant statistics represent an extremely small proportion of the total tests run, implying that the normative group is responding as a homogeneous group overall.

#### *Interested Party Group*

*Kruskal-Wallis Tests for Each Sub-Sample within the Interested Party Group Against the Rest of the Interested Party Group:* Table 5.14 shows the results for the 14 sub-samples of the interested party group. The results indicate that, overall, the interested party group is homogeneous, as the sub-samples do not seem to have given significantly different responses to the rest of the group of respondents. Independent financial advisors, for which the statistics show the lowest level of agreement, agree with the rest of the interested party group for 94.5% of the propositions tested. The fund manager group was further sub-divided into ethical fund managers but there seemed to be very little difference between the results for tests of the fund managers and the ethical fund managers against the rest of the group. Four of the sets of tests for the sub-samples of respondents showed 100% agreement with the rest of the interested party group.

*Kruskal-Wallis Tests of All Interested Party Group Sub-Samples Against Each Other:* Table 5.15 shows the results of a series of 16-sample Kruskal-Wallis tests which indicate a 95.6% agreement in the responses of all the different sub-samples.

**Table 5.13: Kruskal-Wallis Tests of the Two Main Sub-Samples within the Normative Group**

Sub-Sample	Significant Tests (%)	Propositions (1% Significance Level)	KW Statistic	Direction
<b>Environmental Consultants &amp; Advisors</b>	6.6	5.4 Environmental factors that could reduce the value of a company's assets (financial)	9.518	<i>A&lt;EC</i>
		5.4 Environmental factors that could reduce the value of a company's assets (qualitative)	7.919	<i>A&lt;EC</i>
		5.5 Environmental information that may reduce financial performance (qualitative)	7.356	<i>A&lt;EC</i>
		6.5 Soil contamination and remediation (financial)	6.848	<i>A&lt;EC</i>
		7.2 Industry average (financial)	9.860	<i>A&lt;EC</i>
		7.2 Industry average (qualitative)	11.229	<i>A&lt;EC</i>
		7.2 Industry average (quantitative)	12.479	<i>A&lt;EC</i>
		9.5 Accident and emergency response (qualitative)	7.331	<i>A&lt;EC</i>
		11.3 Stand alone published environmental company report every 3 months	10.739	<i>A&lt;EC</i>
		11.4 Stand alone published environmental company report every 6 months	13.651	<i>A&lt;EC</i>
		11.6 Annual stand alone published company environmental report plus an interim environmental statement every 3 months	7.462	<i>A&lt;EC</i>
		12.10 Environmental groups	11.129	<i>A&gt;EC</i>
		12.11 Media	7.055	<i>A&gt;EC</i>
		12.12 Central government	9.818	<i>A&gt;EC</i>
		16.1 Accountants within their existing framework	10.026	<i>A&lt;EC</i>

The second column indicates the proportion (in %) of the total tests run which were significant at a 1% level. In the last column, *A>EC* indicates that the responses from the Advisor sub-sample were higher than those from the Environmental Consultant sub-sample, whereas *A<EC* indicates that the responses from the Advisor sub-sample were lower than those from the Environmental Consultant sub-sample.

**Table 5.14: Kruskal-Wallis Tests for each Sub-Sample within the Interested Party Group Against the Rest of the Interested Party Group**

<b>Sub-Sample</b>	<b>Significant Tests (%)</b>	<b>Propositions (1% Significance Level)</b>	<b>KW Statistic</b>	<b>Direction</b>		
<b>Pressure Groups</b>	4.4	4.1 Raw materials used (financial)	6.866	SS>S		
		4.2 Energy consumption (financial)	10.005	SS>S		
		4.2 Energy consumption (quantitative)	9.073	SS>S		
		6.6 Generation and disposal of waste (quantitative)	6.960	SS>S		
		6.8 Vehicle miles in relation to product (quantitative)	9.999	SS>S		
		8.6 Donations to environmental charities (qualitative)	9.924	SS>S		
		16.4 A new professional body that includes accountants, scientists and environmental consultants	8.816	SS>S		
		17.5 As a result of company ethics	10.032	SS<S		
		17.6 As an acceptance of a change in society's ethics	9.673	SS<S		
		18.3 To avoid providing incriminating information to regulators	8.461	SS>S		
		18.4 Possible damage to companies' reputation	7.922	SS>S		
		20.1 Environmental disclosure that has been analysed would be more useful for accountability and decision-making purposes than raw data	11.023	SS>S		
		<b>Independent Financial Advisors</b>	5.5	11.9 Press release at company's discretion	11.175	SS>S
				12.12 Central government	12.922	SS<S
12.13 Quangos	12.815			SS<S		
12.14 Local government	7.756			SS<S		
12.15 Insurance companies	6.681			SS<S		
12.16 Stock market	10.156			SS<S		
13.3 There should be an allocation of cost between the company and interested party	8.527			SS>S		
14.6 Reliability	8.613			SS<S		
16.1 Accountants within their existing framework	9.541			SS<S		
17.1 To market the company	8.793			SS>S		
17.3 To comply with regulators	9.512			SS<S		
17.4 As a form of political lobbying	8.496	SS<S				
17.8 To acknowledge social responsibility	9.815	SS>S				

**Table 5.14 continued**

<b>Sub-Sample</b>	<b>Significant Tests (%)</b>	<b>Propositions (1% Significance Level)</b>	<b>KW Statistic</b>	<b>Direction</b>
<b>Independent Financial Advisors</b> (continued)	17.10	Peer pressure from companies in the same industry	16.222	<i>SS&lt;S</i>
	17.12	To meet the demand for environmental information	8.318	<i>SS&gt;S</i>
<b>Fund Managers</b> (including Ethical Fund Managers)	0.7	11.8 Specially published company environmental report at company's discretion	7.592	<i>SS&gt;S</i>
		18.3 To avoid providing incriminating information to regulators	8.193	<i>SS&lt;S</i>
<b>Fund Managers</b> (excluding Ethical Fund Managers)	1.5	6.8 Vehicle miles in relation to product (qualitative)	6.762	<i>SS&gt;S</i>
		11.3 Stand-alone published environmental company report every 3 months	6.781	<i>SS&gt;S</i>
		11.8 Specially published company environmental report at company's discretion	6.787	<i>SS&gt;S</i>
		16.1 Accountants within their existing framework	7.694	<i>SS&gt;S</i>
<b>Ethical Fund Managers</b>	0.4	18.3 To avoid providing incriminating information to regulators	8.899	<i>SS&lt;S</i>
<b>Education</b>	3.6	6.5 Soil contamination and remediation (qualitative)	6.727	<i>SS&lt;S</i>
		6.7 Environmental incidents (qualitative)	7.861	<i>SS&lt;S</i>
		9.1 Health and safety (qualitative)	7.621	<i>SS&lt;S</i>
		9.2 Environmental impact assessment (qualitative)	11.648	<i>SS&lt;S</i>
		9.4 Hazard assessment (qualitative)	6.855	<i>SS&lt;S</i>
		9.6 Land contamination and remediation (financial)	7.586	<i>SS&lt;S</i>
		9.6 Land contamination and remediation (qualitative)	7.992	<i>SS&lt;S</i>
		9.10 Compliance with legislation (qualitative)	7.993	<i>SS&lt;S</i>
		18.10 Companies generally believe they do not have an impact on the environment	7.765	<i>SS&gt;S</i>
		19.1 From company head office	12.199	<i>SS&lt;S</i>
<b>Research Body</b>	1.1	6.1 Raw material use (qualitative)	7.429	<i>SS&gt;S</i>
		12.8 Suppliers	9.762	<i>SS&lt;S</i>
		12.10 Environmental groups	7.417	<i>SS&lt;S</i>

**Table 5.14 continued**

<b>Sub-Sample</b>	<b>Significant Tests (%)</b>	<b>Propositions (1% Significance Level)</b>		<b>KW Statistic</b>	<b>Direction</b>
<b>Bank</b>	3.6	4.2	Energy consumption (qualitative)	9.533	<i>SS&lt;S</i>
		4.2	Energy consumption (quantitative)	10.191	<i>SS&lt;S</i>
		4.3	Water consumption (financial)	8.289	<i>SS&lt;S</i>
		4.3	Water consumption (qualitative)	10.680	<i>SS&lt;S</i>
		4.3	Water consumption (quantitative)	11.251	<i>SS&lt;S</i>
		6.8	Vehicle miles in relation to product (quantitative)	7.399	<i>SS&lt;S</i>
		8.6	Donations to environmental charities (financial)	6.830	<i>SS&lt;S</i>
		12.17	Customers	7.592	<i>SS&gt;S</i>
		18.5	To avoid providing incriminating information to regulators	6.970	<i>SS&lt;S</i>
		20.4	Company environmental disclosure should be regulated in the same way as accounting disclosure	8.196	<i>SS&lt;S</i>
<b>Political Body</b>	0.0	-	None	-	-
<b>Insurance</b>	0.4	17.1	To market the company	6.716	<i>SS&lt;S</i>
<b>Statutory Body</b>	0.7	11.2	Environmental information within the published company Annual Report plus the half yearly interim statement	7.064	<i>SS&gt;S</i>
		11.7	Annual stand-alone published company environmental report plus an interim environmental statement every 6 months	7.526	<i>SS&gt;S</i>
<b>Charity</b>	0.0	-	None	-	-
<b>Professional Body</b>	0.4	17.2	To market company products	6.837	<i>SS&lt;S</i>
<b>Local Government</b>	0.0	-	None	-	-
<b>Media</b>	0.0	-	None	-	-

The second column indicates the proportion (in %) of the total tests run which were significant at a 1% level. In the last column, *SS>S* indicates that the responses from the sub-sample were higher than those from the rest of the respondent group, whereas *SS<S* indicates that the responses from the sub-sample were lower than those from the rest of the respondent group.

**Table 5.15: Kruskal-Wallis Tests of All Interested Party Group Sub-Samples Against Each Other**

<b>Sub-Samples</b>	<b>Significant Tests (%)</b>		<b>Propositions (1% Significance Level)</b>	<b>KW Statistic</b>
<b>All 15 Sub-samples</b> (plus an anonymous group)	4.4	6.7	Environmental incidents (qualitative)	32.079
		6.8	Vehicle miles in relation to product (quantitative)	34.813
		9.6	Land contamination and remediation (qualitative)	29.573
		11.8	Specially published company environmental report at company's discretion	32.875
		12.12	Central government	33.513
		12.17	Stock market	35.755
		13.2	The interested party should pay	29.269
		13.3	There should be an allocation of cost between the company and interested parties	29.380
		16.4	A new professional body that includes accountants, scientists and environmental consultants	29.386
		17.8	To acknowledge social responsibility	35.545
		18.4	Possible damage to companies' reputation	29.546
		19.1	From company head office	29.603

The second column indicates the proportion (in %) of the total tests run which were significant at a 1% level.

*Kruskal-Wallis Tests of the Two Main Sub-Samples (Financial and Non-Financial Users)*

*within the Interested Party Group:* Table 5.16 indicates that 89.8% of the tests run showed no disagreement between the responses from the two main sub-groups of respondents. Where a significant difference in views was indicated, the financial users' results showed that their responses were generally lower than those of the non-financial users, indicating their lesser interest in those specific environmental issues. The cases where the financial users' responses were significantly higher than those from the non-financial users were generally items of financial information, indicating that they attach more importance to financial information than non-financial users. However, again, the number of significant statistics is so small in relation to the total number of tests run that they do not reject the homogeneity of the interested party respondent group.

*Company Group*

*Kruskal-Wallis Tests of Each Sub-Sample within the Company Group Against the Rest of the Company Group:* Table 5.17 presents the results of tests which compare the responses from each industry sub-sample against the responses from the rest of the company group. There are two industry sub-groups for which the results are of particular interest. The water industry results indicate agreement for 85.1% of the 343 tests performed, which is enough to indicate homogeneity, but also allow some interesting comments on the few areas of disagreement. The chemical industry shows agreement for 87.5% of the tests. The respondents within both of these industries recorded higher scores than the rest of the company group in nearly all the significant tests. This implies that they report significantly more environmental information than companies from the other industries in the group, or are more interested in environmental issues. It is interesting to note that the chemical industry (see appendix B, tables 7 and 8 and section

**Table 5.16: Kruskal-Wallis Tests of the Two Main Sub-Samples within the Interested Party Group**

Sub-Sample	Significant Tests (%)	Propositions (1% Significance Level)	KW Statistic	Direction
Financial & Non-Financial	10.2	3.9 Research and development and the environment (quantitative)	7.170	<i>F &lt; NF</i>
		4.2 Energy consumption (financial)	8.524	<i>F &lt; NF</i>
		4.2 Energy consumption (qualitative)	7.632	<i>F &lt; NF</i>
		4.2 Energy consumption (quantitative)	13.171	<i>F &lt; NF</i>
		4.3 Water consumption (quantitative)	7.217	<i>F &lt; NF</i>
		5.2 The risk of site contamination (financial)	6.944	<i>F &gt; NF</i>
		5.6 Financial information that could impose actual liability on a company's lender (financial)	6.950	<i>F &gt; NF</i>
		5.7 Environmental information that may cause financial failure (financial)	7.479	<i>F &gt; NF</i>
		6.6 Generation and disposal of waste (quantitative)	9.757	<i>F &lt; NF</i>
		6.8 Vehicle miles in relation to product (quantitative)	16.730	<i>F &lt; NF</i>
		6.9 Noise and odour (quantitative)	16.100	<i>F &lt; NF</i>
		6.10 Local environmental impact (quantitative)	6.884	<i>F &lt; NF</i>
		7.1 Legal compliance (qualitative)	7.596	<i>F &gt; NF</i>
		8.6 Donations to environmental charities (qualitative)	10.313	<i>F &lt; NF</i>
		8.6 Donations to environmental charities (quantitative)	9.662	<i>F &lt; NF</i>
		9.5 Accident and emergency response (quantitative)	8.513	<i>F &lt; NF</i>
		11.8 Specially published company environmental report at company's discretion	7.390	<i>F &gt; NF</i>
		12.1 Employees	6.872	<i>F &lt; NF</i>
		12.2 Legislators and regulators	7.287	<i>F &lt; NF</i>
		12.12 Central government	7.748	<i>F &lt; NF</i>
		12.14 Local government	10.230	<i>F &lt; NF</i>
		16.2 Scientists within their existing framework	9.544	<i>F &lt; NF</i>
		17.4 As a form of political lobbying	10.199	<i>F &lt; NF</i>
	17.8 To acknowledge social responsibility	9.549	<i>F &gt; NF</i>	
	17.10 Peer pressure from companies in the same industry	7.661	<i>F &lt; NF</i>	
	18.1 Reluctance to report sensitive information	11.838	<i>F &lt; NF</i>	
	18.3 To avoid providing incriminating information to regulators	20.640	<i>F &lt; NF</i>	
	18.4 possible damage to companies' reputation	20.322	<i>F &lt; NF</i>	

The second column indicates the proportion (in %) of the total tests run which were significant at a 1% level. In the last column, *F > NF* indicates that the responses from the Financial User sub-sample were higher than those from the Non-Financial User sub-sample, whereas *F < NF* indicates that the responses from the Financial User sub-sample were lower than those from the Non-Financial User sub-sample.



**Table 5.17: Kruskal-Wallis Tests of Each Sub-Sample within the Company Group Against the Rest of the Company Group**

<b>Sub-Sample</b>	<b>Significant Tests (%)</b>	<b>Propositions (1% Significance Level)</b>	<b>KW Statistic</b>	<b>Direction</b>
<b>Food Manufacturing</b>	1.5	3.3 Environmental strategy statement (financial)	8.470	SS>S
		14.7 Faithful representation	8.548	SS<S
		14.13 Completeness	9.798	SS<S
		14.15 Consistency	7.777	SS<S
		17.1 To market the company	6.823	SS<S
<b>Oil, Gas &amp; Nuclear Fuels</b>	2.0	3.4 Environmental management system (quantitative)	7.131	SS>S
		3.13 Product life cycle design (financial)	7.692	SS>S
		3.13 Product life cycle design (quantitative)	6.717	SS>S
		8.1 Environmental spending (qualitative)	6.974	SS>S
		9.7 Environmental integration of business (financial)	11.442	SS>S
		10.3 Local authority (report impact)	7.477	SS<S
		14.15 Consistency	7.909	SS>S
<b>Building Materials &amp; Services</b>	6.6	3.11 Context of company environmental disclosure (financial)	7.299	SS>S
		3.14 Product packaging (qualitative)	7.767	SS>S
		5.3 The risk of environmental influences on companies' markets (quantitative)	6.967	SS>S
		5.4 Environmental factors that could reduce the value of a company's assets (qualitative)	8.301	SS>S
		8.4 Government environmental taxes and charges (quantitative)	15.900	SS>S
		8.5 Environmental fines and negotiated settlements (qualitative)	9.105	SS>S
		8.5 Environmental fines and negotiated settlements (quantitative)	7.701	SS>S
		9.1 Health and safety (qualitative)	8.787	SS>S
		9.4 Hazard assessment (qualitative)	7.032	SS>S
		14.3 Predictive value	11.262	SS>S
		14.13 Completeness	13.341	SS>S
		14.14 Comparability	12.157	SS>S
		14.17 Timeliness	8.726	SS>S

**Table 5.17 continued**

<b>Sub-Sample</b>	<b>Significant Tests (%)</b>		<b>Propositions (1% Significance Level)</b>	<b>KW Statistic</b>	<b>Direction</b>
<b>Building Materials &amp; Services</b> (continued)	6.6	16.2	Scientists within their existing framework	9.020	SS>S
		16.9	Internal management team	7.246	SS>S
		17.11	Pressure from customers/consumers	7.589	SS<S
		17.12	To meet the demand for environmental information	7.384	SS<S
		18.7	Cost of disclosure	7.337	SS<S
<b>Chemicals</b>	12.5	3.1	Environmental statement by company chairman (financial)	8.664	SS>S
		3.1	Environmental statement by company chairman (quantitative)	10.251	SS>S
		3.4	Environmental Management System (financial)	10.297	SS>S
		3.9	Research and development and the environment (quantitative)	8.494	SS>S
		4.1	Raw materials used (financial)	6.694	SS>S
		5.3	The risk of environmental influences on companies' markets (quantitative)	8.429	SS>S
		5.4	Environmental factors that could reduce the value of a company's assets (qualitative)	11.227	SS>S
		5.4	Environmental factors that could reduce the value of a company's assets (quantitative)	9.335	SS>S
		5.6	Financial information that could impose actual liability on a company's lender (financial)	7.635	SS>S
		5.7	Environmental information that may cause financial failure (qualitative)	10.205	SS>S
		5.7	Environmental information that may cause financial failure (quantitative)	7.380	SS>S
		6.5	Soil contamination and remediation (financial)	11.636	SS>S
		6.5	Soil contamination and remediation (quantitative)	8.314	SS>S
		6.8	Vehicle miles in relation to product (qualitative)	12.035	SS>S
		6.8	Vehicle miles in relation to product (quantitative)	12.473	SS>S
		7.1	Legal compliance (quantitative)	7.606	SS>S
		7.2	Industry average (financial)	8.350	SS>S
		7.3	Sustainable development (financial)	11.475	SS>S
		7.3	Sustainable development (qualitative)	9.408	SS>S
		7.3	Sustainable development (quantitative)	7.880	SS>S
8.2	Environmental liabilities (financial)	8.330	SS>S		

**Table 5.17 continued**

<b>Sub-Sample</b>	<b>Significant Tests (%)</b>	<b>Propositions (1% Significance Level)</b>	<b>KW Statistic</b>	<b>Direction</b>
<b>Chemicals</b> (continued)	8.2	Environmental liabilities (quantitative)	11.085	SS>S
	8.4	Government environmental taxes and charges (qualitative)	7.033	SS>S
	8.4	Government environmental taxes and charges (quantitative)	10.427	SS>S
	8.5	Environmental fines and negotiated settlements (financial)	9.261	SS>S
	8.5	Environmental fines and negotiated settlements (qualitative)	9.241	SS>S
	8.5	Environmental fines and negotiated settlements (quantitative)	13.962	SS>S
	8.6	Donations to environmental charities (qualitative)	7.691	SS>S
	8.6	Donations to environmental charities (quantitative)	10.345	SS>S
	10.3	Local authority (assessing)	7.748	SS<S
	10.9	Quango (reporting)	9.498	SS<S
	11.6	Annual stand alone published company environmental report plus an interim environmental statement every 3 months	7.523	SS>S
	14.13	Completeness	9.113	SS>S
	17.10	Peer pressure from companies in the same industry	7.716	SS<S
	c15.2	Cost of environmental compliance	7.960	SS>S
	c15.3	Cost of keeping ahead of the regulator	17.943	SS>S
	c15.4	Cost of non-compliance with environmental legislation	10.778	SS>S
	c15.5	Cost of implementation of pollution control measures	12.936	SS>S
	c15.7	Cost savings from recycling	11.434	SS>S
	c15.10	Compliance cost of industry association directives	20.975	SS>S
	c15.11	Compliance cost of BS7750 and/or E.M.A.S	12.719	SS>S
c15.12	Cost of introducing Environmental Management System	11.681	SS>S	
c16.1	An environmental consulting firm	6.717	SS<S	

**Table 5.17 continued**

<b>Sub-Sample</b>	<b>Significant Tests (%)</b>	<b>Propositions (1% Significance Level)</b>	<b>KW Statistic</b>	<b>Direction</b>
<b>Transport Services</b>	2.6	3.6 Environmental audit (qualitative)	8.550	SS>S
		3.10 Company environmental initiatives (qualitative)	8.692	SS>S
		3.12 Environmental reporting policy (qualitative)	7.390	SS>S
		6.8 Vehicle miles in relation to product (quantitative)	6.774	SS>S
		11.4 Stand alone published environmental company report every 6 months	25.750	SS>S
		11.5 Stand alone published environmental company report annually	7.956	SS>S
		11.6 Annual stand alone published company environmental report and an interim environmental statement every 3 months	17.493	SS>S
		11.7 Annual stand alone published company environmental report and an interim environmental statement every 6 months	34.500	SS>S
		12.14 Local government	6.771	SS<S
		<b>Food Wholesaling &amp; Retailing</b>	3.8	3.7 Independently verified environmental disclosure (qualitative)
3.10 Company environmental initiatives (qualitative)	6.862			SS>S
7.2 Industry average (qualitative)	7.077			SS>S
10.1 Company employees (reporting impact)	8.156			SS<S
12.16 Banks	6.961			SS>S
13.1 The company should absorb the full cost	7.880			SS>S
17.9 To attract investment	8.273			SS>S
18.1 Reluctance to report sensitive information	8.118			SS>S
18.7 Cost of disclosure	10.636			SS<S
18.8 Lack of awareness of competitive advantage	6.989			SS<S
18.9 There is no legal obligation for companies to report environmentally	8.822			SS<S
19.2 From company head office and at site/branch level	7.571			SS>S
20.3 It would be useful for accountability and decision-making purposes if companies disclosed environmental target-setting information with respect to a set classification	12.115			SS>S

**Table 5.17 continued**

<b>Sub-Sample</b>	<b>Significant Tests (%)</b>		<b>Propositions (1% Significance Level)</b>	<b>KW Statistic</b>	<b>Direction</b>
<b>Health &amp; Household</b>	1.2	10.3	Local authority (assessing impact)	7.320	SS>S
		10.3	Local authority (reporting impact)	7.576	SS>S
		10.5	Central government (assessing impact)	9.099	SS>S
		10.9	Quango (reporting impact)	7.111	SS>S
<b>Water</b>	14.9	3.1	Environmental statement by company chairman (qualitative)	8.008	SS>S
		3.7	Independently verified environmental disclosure (quantitative)	14.963	SS>S
		3.8	Legal environmental compliance (quantitative)	6.718	SS>S
		3.10	Company environmental initiatives (quantitative)	9.466	SS>S
		3.11	Context of company environmental disclosure (qualitative)	9.194	SS>S
		3.11	Context of company environmental disclosure (quantitative)	10.111	SS>S
		3.12	Environmental reporting policy (quantitative)	9.756	SS>S
		5.1	The risk of non-compliance with legislation (financial)	8.363	SS>S
		5.1	The risk of non-compliance with legislation (quantitative)	9.623	SS>S
		5.3	The risk of environmental influences on companies' markets (financial)	8.993	SS>S
		5.4	Environmental factors that could reduce the value of a company's assets (financial)	7.885	SS>S
		5.5	Environmental information that may reduce financial performance (quantitative)	7.310	SS>S
		6.4	Water effluents (quantitative)	7.155	SS>S
		6.5	Soil contamination and remediation (financial)	7.569	SS>S
		6.5	Soil contamination and remediation (qualitative)	7.466	SS>S
		6.5	Soil contamination and remediation (quantitative)	8.884	SS>S
		6.6	Generation and disposal of waste (financial)	6.999	SS>S
		6.6	Generation and disposal of waste (qualitative)	6.739	SS>S
		6.6	Generation and disposal of waste (quantitative)	7.553	SS>S
		6.7	Environmental incidents (quantitative)	7.234	SS>S
		6.8	Vehicle miles in relation to product (qualitative)	12.035	SS>S
		6.9	Noise and odour (qualitative)	9.049	SS>S
6.9	Noise and odour (quantitative)	10.846	SS>S		

**Table 5.17 continued**

<b>Sub-Sample</b>	<b>Significant Tests (%)</b>	<b>Propositions (1% Significance Level)</b>	<b>KW Statistic</b>	<b>Direction</b>
<b>Water</b> (continued)	6.10	Local environmental impact (financial)	8.579	SS>S
	6.10	Local environmental impact (quantitative)	9.151	SS>S
	7.3	Sustainable development (financial)	8.824	SS>S
	8.1	Environmental spending (financial)	7.693	SS>S
	8.1	Environmental spending (qualitative)	6.862	SS>S
	8.1	Environmental spending (quantitative)	7.588	SS>S
	8.2	Environmental liabilities (financial)	10.520	SS>S
	8.3	Environmental benefits and opportunities (financial)	7.070	SS>S
	8.4	Government environmental taxes and charges (financial)	19.629	SS>S
	8.4	Government environmental taxes and charges (qualitative)	6.849	SS>S
	8.5	Environmental fines and negotiated settlements (financial)	8.788	SS>S
	8.6	Donations to environmental charities (financial)	6.743	SS>S
	9.9	Setting measurable environmental targets and objectives (qualitative)	7.068	SS>S
	9.11	Compliance with industry standards (quantitative)	8.204	SS>S
	10.6	The Department of the Environment (assessing impact)	7.875	SS>S
	10.6	The Department of the Environment (reporting impact)	7.777	SS>S
	12.3	Local communities	7.593	SS>S
	12.5	Potential investors	6.802	SS>S
	12.10	Environmental groups	9.612	SS>S
	12.17	Stock market	7.572	SS>S
	11.5	Stand alone published environmental company report annually	10.760	SS>S
	14.4	Confirmation of information	9.399	SS>S
	14.16	Corresponding information for previous period	7.930	SS>S
	16.4	A new professional body that includes accountants, scientists and environmental consultants	8.522	SS>S
	17.3	To comply with regulations	6.671	SS<S
	c15.8	Reduced "environmental" insurance premium	10.314	SS>S

**Table 5.17 continued**

<b>Sub-Sample</b>	<b>Significant Tests (%)</b>	<b>Propositions (1% Significance Level)</b>	<b>KW Statistic</b>	<b>Direction</b>
<b>Water</b> (continued)	c15.9	Increased "environmental" insurance premium	32.326	SS>S
	c16.1	An environmental consulting firm	6.999	SS>S
<b>Engineering - General</b>	0.6	7.3 Sustainable development (qualitative)	8.164	SS>S
		17.10 Peer pressure from companies in the same industry	8.563	SS>S
<b>Stores</b>	2.6	3.3 Environmental strategy statement (financial)	8.095	SS>S
		3.4 Environmental management system (financial)	7.182	SS>S
		5.7 Environmental information that may cause financial failure (financial)	7.607	SS>S
		5.7 Environmental information that may cause financial failure (qualitative)	7.370	SS>S
		5.7 Environmental information that may cause financial failure (quantitative)	6.757	SS>S
		10.7 The Department of Trade and Industry (reporting impact)	6.906	SS>S
		10.8 The Department of Agriculture (assessing impact)	10.339	SS>S
		10.8 The Department of Agriculture (reporting impact)	7.545	SS>S
		11.8 Specially published company environmental report at company's discretion	8.148	SS>S
<b>Transport-Manufacture &amp; Distribution</b>	1.2	3.2 Environmental policy statement (qualitative)	7.252	SS<S
		20.2 Interested parties require company environmental disclosure for accountability and decision-making purposes	7.809	SS>S
		c15.8 Reduced "environmental" insurance premium	10.314	SS>S
		c15.9 Increased "environmental" insurance premium	17.569	SS>S
<b>Business Services</b>	0.0	- None	-	-
<b>Contracting, Construction</b>	0.3	3.4 Environmental management system (financial)	7.182	SS>S
<b>Electricity</b>	0.0	- None	-	-
<b>Hotel &amp; Leisure</b>	0.0	- None	-	-

3.3.1) has its own set of reporting guidelines and that the water industry is constantly under increasing legal pressure to improve their water quality. The possibility of certain industries being more involved in environmental reporting than others was discussed in section 5.4.3. For eight of the industry sub-samples there was 100% agreement with the rest of the company group.

*Kruskal-Wallis Tests of All Company Group Sub-Samples Against Each Other:* Table 5.18 presents the results of a series of 25-sample Kruskal-Wallis tests comparing the responses from all the industry sub-samples against each other at once. The results indicate a 98.5% agreement. It is particularly interesting that in the very small area of disagreement (1.5% of the tests) the disagreement is always in the area of useful information.

It is notable that there is a further limitation, relating to the use of the Kruskal-Wallis test, in that as sample sizes become smaller it becomes increasingly difficult to reject the null hypothesis that the samples are the same. A significant statistic, indicating that there is a difference between the responses of two sub-samples is perfectly valid, but the insignificant statistics do not necessarily indicate that the smallest sub-samples are responding in the same way as the rest of the group. According to Siegel and Castellan (1988, page 210) :

"When the sample sizes are small, only relatively large differences are detected by our statistical procedures which lead to rejection of  $H_0$ . This is because when the sample size is small and  $H_0$  is in fact true, the probability of large variation in outcomes is also large. As a consequence, it is difficult to distinguish between outcomes reflecting merely chance deviations (when  $H_0$  is true) and true differences (when  $H_1$  is true). If  $H_0$  is not rejected, then there in fact may be no differences between the groups - or the sample sizes may be so small that true differences can not be detected".

In relation to group homogeneity for this research, although there is a low rejection of



**Table 5.18: Kruskal-Wallis Tests of All Company Group Sub-Samples Against Each Other**

Sub-Sample	Significant Tests (%)		Propositions (1% Significance Level)	KW Statistic
<b>24 Sub-Sample</b> (plus an anonymous group)	1.5	6.8	Vehicle miles in relation to product (qualitative)	32.152
		7.1	Legal compliance (quantitative)	34.229
		8.4	Government environmental taxes and charges (quantitative)	29.163
		9.6	Land contamination and remediation (quantitative)	30.707
		9.11	Compliance with industry standards (qualitative)	31.582

The second column indicates the proportion (in %) of the total tests run which were significant at a 1% level.

the null hypothesis (that the responses from the sub-group are not significantly different from those of the rest of the group) where the sub-samples are very small this is still the case for bigger sub-samples (such as the environmental consultant sub-group). This implies there is no strong basis for rejecting the homogeneity of the three respondent groups from these series of tests. Overall, the extensive use of the Kruskal-Wallis test in this section indicates strongly that each of the three groups is homogeneous.

### **5.7.5 Summary**

In any research methodology, there are limitations. Section 5.7 has made these implicit limitations explicit. It is important to acknowledge from the outset of the research that normative and positive approaches are being applied in the research, as this needs to be taken into account in interpreting the results, with the implication that findings may be less clear-cut than they appear. Given limited resources, this seemed the most advantageous approach to adopt in investigating the attitudes and/or practice of the three groups. Other potential limitations relating to combining the different realities of three respondent groups and attempting to obtain a consensus from these realities have also been considered as these too may affect the interpretation of the empirical findings. Lastly, there are several limitations relating to the statistical analysis of the responses. However, the discussion indicates that these should not pose a problem in the current research, as the respondents are likely to be representative of their groups and the groups appear to be homogeneous to a high degree.

## 5.8 Conclusion

This chapter has reported and discussed the methodological approach of the thesis, including the initial decisions, relating to sample selection, and data collection, to the techniques of statistical analysis and interpretation. The rationale for selecting a mail questionnaire has been presented. Furthermore, the preliminary investigation, and the pilot questionnaire have been discussed in full. The development of the content and structure of the final questionnaire have also been considered, as well as the logistics and provisions for the final mail questionnaire. To summarise, every effort has been made to incorporate advice from the literature and existing theory into the research design, so as to maximise response and ensure an unbiased and extensive data set, as well as an efficient and appropriate statistical analysis.

## **Chapter Six**

### **The Attitudes of the Normative Group towards a Conceptual Framework for Corporate Environmental Reporting**

*"Given the cock-ups we have had with existing accounting standards, one shudders with horror at the thought of that bunch pushing companies around and charging them for an environmental audit" .*

Normative group respondent

#### **6.1 Introduction**

This chapter analyses the responses from the normative group. The structure follows the research design established in chapter five. Section 6.2 considers the attitudes of the normative group towards three broad areas. Firstly, reporting of useful corporate environmental information, in relation to disclosure on a financial, quantitative and/or qualitative basis, is considered. Secondly, environmental reports and reporting are considered, providing the respondents' perception of corporate environmental reporting reality, and thirdly, corporate environmental disclosure. A further section discusses any points that the respondents felt were omitted. The chapter concludes in section 6.3.

#### **6.2 The Empirical Findings**

##### **6.2.1 Attitudes Towards Corporate Environmental Information, in Relation to Financial, Quantitative and Qualitative Disclosure**

The attitudes of the normative group towards a "wish list" (see section 3.3.2) of corporate environmental information which may be useful for interested parties is considered in this section of the enquiry.

## **(i) The Usefulness of Corporate Environmental Information**

This part of the enquiry asks the normative group what environmental corporate disclosure is considered useful for interested parties, as well as the basis on which environmental information should be disclosed (see section 3.4(ii)). The respondents were required to indicate their views by selecting a score from 1 (Never) to 3 (Always). In addition, they were required to repeat this selection for each of three types of disclosure, namely financial, quantitative and qualitative. On a financial basis, the descriptive statistics (see table 6.1, part A) showed that product life-cycle design requires the most frequent disclosure according to the normative group (proposition (1); mean = 2.25). They also attached importance to environmental audit (proposition (2); mean = 2.22) and product impacts (proposition (3); mean = 2.21). The disclosure items, considered of least value to interested parties, were: environmental statement by company chairman (proposition (15); mean = 1.98); environmental strategy statement (proposition (14); mean = 2.02) and; environmental management system (proposition 13; mean = 2.03). The respondents did not demonstrate strong preferences among the disclosure items disclosed on a financial basis (see the Wilcoxon results in appendix D, table 1, part A).

On a quantitative basis, (see table 6.1, part B) the normative group consider that product impacts (proposition (1); mean = 2.44) and legal environmental compliance (proposition (2); mean = 2.44) are the most useful disclosure items for interested parties and should therefore be the most frequently reported. The percentage ratings show that over 50% of the respondents were of the opinion that legal environmental compliance should always be reported. The quantitative disclosure items considered least useful were:

**Table 6.1: Descriptive Statistics  
The Usefulness of Corporate Environmental Information**

	N	Mean	S.D.	P: 1	P: 3
<b>Part A: Financial Disclosure</b>					
1. Product life cycle design.	83	2.25	0.66	12.0	37.3
2. Environmental audit.	83	2.22	0.65	12.0	33.7
3. Product impacts.	80	2.21	0.65	12.5	33.8
4. Environmental reporting policy.	79	2.15	0.68	16.5	31.6
5. Product packaging.	79	2.14	0.67	16.5	30.4
6. Research & Development and the environment.	85	2.13	0.57	10.6	23.5
7. Legal environmental compliance.	82	2.10	0.83	29.3	39.0
8. Environmental policy statement.	82	2.09	0.74	23.2	31.7
9. Company environmental initiatives.	85	2.08	0.56	11.8	20.0
10. Context of company environmental disclosure.	77	2.05	0.67	19.5	24.7
11. Management responsibilities for the environment.	82	2.04	0.66	19.5	23.2
12. Independently verified environmental disclosure.	83	2.04	0.67	20.5	24.1
13. Environmental management system.	81	2.03	0.63	18.5	21.0
14. Environmental strategy statement.	82	2.02	0.68	22.0	24.4
15. Environmental statement by company chairman.	82	1.98	0.59	18.3	15.9
<b>Part B: Quantitative Disclosure</b>					
1. Product impacts.	82	2.44	0.59	4.9	48.8
2. Legal environmental compliance.	85	2.44	0.70	11.8	55.3
3. Environmental audit.	83	2.37	0.64	8.4	45.8
4. Environmental management system.	81	2.33	0.63	8.6	42.0
5. Independently verified environmental disclosure.	84	2.32	0.68	11.9	44.0
6. Management responsibilities for the environment.	79	2.32	0.69	12.7	44.3
7. Product packaging.	81	2.28	0.62	8.6	37.0
8. Environmental reporting policy.	81	2.28	0.66	11.1	39.5
9. Product life cycle design.	81	2.26	0.67	12.3	38.3
10. Company environmental initiatives.	84	2.24	0.55	6.0	29.8
11. Environmental strategy statement.	83	2.19	0.65	13.3	32.5
12. Environmental policy statement.	80	2.19	0.78	22.5	41.3
13. Research & Development and the environment.	83	2.18	0.63	12.0	30.1
14. Environmental statement by company chairman.	82	2.17	0.68	15.9	32.9
15. Context of company environmental disclosure.	75	2.04	0.67	20.0	24.0

**Table 6.1 continued**

	N	Mean	S.D.	P: 1	P: 3
<b>Part C: Qualitative Disclosure</b>					
1. Environmental policy statement.	87	2.58	0.66	9.2	66.7
2. Environmental strategy statement.	86	2.47	0.66	9.3	55.8
3. Product impacts.	82	2.44	0.63	7.3	51.2
4. Environmental statement by company chairman.	88	2.43	0.62	6.8	50.0
5. Environmental audit.	83	2.39	0.68	10.8	49.4
6. Legal environmental compliance.	83	2.37	0.79	19.3	56.6
7. Environmental reporting policy.	86	2.36	0.61	7.0	43.0
8. Management responsibilities for the environment.	84	2.36	0.69	11.9	47.6
9. Environmental management system.	88	2.35	0.70	12.5	47.7
10. Product packaging.	84	2.32	0.62	8.3	40.5
11. Company environmental initiatives.	85	2.28	0.63	9.4	37.6
12. Independently verified environmental disclosure.	83	2.22	0.72	16.9	38.6
13. Research & Development and the environment.	85	2.19	0.65	12.9	31.8
14. Product life cycle design.	83	2.17	0.68	15.7	32.5
15. Context of company environmental disclosure.	77	2.13	0.68	16.9	29.9
16. None of the above = 2	Non-response = 1				
17. Others:					
(i) Environmental impact assessments relating to specific schemes.					
(ii) Frequency of disclosure is not really a key issue - the quality of the information is more important.					
(iii) Results of monitoring by National Rivers Authority / Her Majesty's Inspectorate of Pollution.					
(iv) Accounting Standards for contingencies / liabilities.					
(v) There are many interested parties internal and external, someone is bound to be interested in each of the categories depending on their own particular interest. Product plus process material / energy inputs plus outputs - data allowing product plus process life cycles to be undertaken.					
(vi) Investment in distinct environmental improvements against standard set of criteria.					
(vii) Clear setting of targets/objectives (quantitatively)					

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 3-point scale where 1 = Never, 2 = Sometimes, and 3 = Always. P: 1 represents the percentage rating for the frequency of response for 1 (Never). P: 3 represents the percentage rating for the frequency of response for 3 (Always).

context of company environmental disclosure (proposition (15); mean = 2.04); environmental statement by company chairman (proposition (14); mean = 2.17) and; research and development in the environment (proposition (13); mean = 2.18). Wilcoxon tests (appendix D, table 1, part B) showed that the context of company environmental disclosure is considered significantly less useful than most of the other propositions.

On a qualitative basis, the descriptive statistics (table 6.1, part C) revealed the normative group to consider that environmental policy statement (proposition (1); mean = 2.58) is extremely useful to interested parties and should be frequently disclosed. Of the respondents, 66.7% indicated a score of 3 (always), as opposed to only 9.2% who indicated a score of 1 (never). Other items, which were considered useful, were environmental strategy statement (proposition (2); mean = 2.47); product impacts (proposition (3); mean = 2.44); environmental statement by company chairman (proposition (4); mean = 2.43); environmental audit (proposition (5); mean = 2.39) and; legal environmental compliance (proposition (6); mean = 2.37). Items which are considered less useful are product life cycle design (proposition (14); mean = 2.17), and context of company environmental disclosure (proposition (15); mean = 2.13). Wilcoxon tests (appendix D, table 1, part C) showed that the environmental policy statement is considered significantly more useful than most of the other proposed items.

A comparison (see appendix D, table 1, part D) of the three types of disclosure for each item showed that either quantitative or qualitative disclosure is preferred for over half the proposed items, and that in no case is financial disclosure preferred to quantitative or qualitative. In summary, the context of company environmental disclosure, on a qualitative and quantitative basis, is of little significance to the respondents, and



financial is marginal at best. Environmental policy and strategy statements are more useful on a qualitative basis than either financial or quantitative. Also, independently-verified disclosure and legal environmental compliance are regarded as more useful on a quantitative basis than financial, suggesting that the number of laws which have not been complied with is more important than the level of fines and settlements (contrary to PERI, 1994). Interestingly enough, none of the results indicates a preference for financial disclosure. The findings confirm that disclosure on a quantitative and qualitative basis is perceived as useful, supporting Gray *et al.* (1996a) and the World Industry Council for the Environment (WICE, 1994), while rejecting the overriding concentration on financial disclosure, advocated by Bennet *et al.* (1996) and the European Federation of Financial Analysts (EFFAS, 1994).

## **(ii) Corporate Environmental Resource Information**

In relation to the usefulness of physical inputs (see section 3.4(ii)) as a measurement basis for a conceptual framework in corporate environmental reporting, the respondents were asked to indicate the importance of information concerning these inputs to interested parties by selecting the required frequency of disclosure on a scale of 1 (Never) to 3 (Always), for the three types of disclosure, financial, quantitative and qualitative. Descriptive statistics (see table 6.2, part A) showed that on a financial basis, energy consumption (proposition (1); mean = 2.24) is regarded as useful to interested parties, and should be frequently disclosed. Raw materials used (proposition (3); mean = 2.13) was considered quite important, and should be disclosed at least some of the time. The fact that all these disclosure inputs are considered equal in importance by the respondents is emphasised by the absence of any significant Wilcoxon results.

**Table: 6.2: Descriptive Statistics  
Corporate Environmental Resource Information**

	N	Mean	S.D.	P: 1	P: 3
<b>Part A: Financial Disclosure</b>					
1. Energy consumption.	81	2.24	0.68	13.6	37.0
2. Water consumption.	81	2.15	0.62	12.3	27.2
3. Raw materials used.	80	2.13	0.72	20.0	32.5
<b>Part B: Quantitative Disclosure</b>					
1. Energy consumption.	88	2.49	0.63	6.8	55.7
2. Raw materials used.	87	2.46	0.66	9.2	55.2
3. Water consumption.	87	2.37	0.65	9.2	46.0
<b>Part C: Qualitative Disclosure</b>					
1. Energy consumption.	80	2.28	0.69	13.8	41.3
2. Raw materials used.	83	2.25	0.71	15.7	41.0
3. Water consumption.	80	2.19	0.70	16.3	35.0
4. None of the above = 6	Non-response = 3				
5. Others:					
(i) Other resources, e.g. soil.					
(ii) Air consumption?					
(iii) Sources and sustainability of these i.e. supply chain.					
(iv) Waste produced, quantities re-used.					
(v) Always for internal use sometimes for external use.					
(vi) Visual impact.					

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 3-point scale where 1 = Never, 2 = Sometimes, and 3 = Always. P: 1 represents the percentage rating for the frequency of response for 1 (Never). P: 3 represents the percentage rating for the frequency of response for 3 (Always).

On a quantitative basis (see table 6.2, part B) energy consumption (propositions (1); mean = 2.49) again received the highest average score from the respondents. Of the respondents, 55.7% indicated a score of 3, whereas only 6.8% reported a score of 1. Raw material used (proposition (2); mean = 2.46) was also considered to be important and necessitated frequent disclosure. The lowest mean average score was allotted to water consumption (proposition (3); mean = 2.37). Comparing the propositions (see Wilcoxon results, appendix D, table 2, part A) one significant statistic showed that energy consumption is seen as significantly more useful than water consumption.

On a qualitative basis (table 6.2, part C) the proposition receiving the highest mean average score was again energy consumption (proposition (1); mean = 2.28). However, the findings suggest that water consumption (proposition (3); mean = 2.19) is only moderately useful. The absence of significant Wilcoxon results emphasises the respondents' inability to discriminate between the three disclosure inputs.

A comparison between the three ways of disclosing the inputs (see Wilcoxon results, appendix D, table 2, part B) indicated that for all three propositions, quantitative disclosure is regarded as being significantly more useful than financial or qualitative disclosure. To summarise, the findings indicate that disclosure of all three propositions is useful and that the preferred measurement base is quantitative rather than financial, supporting the views of, for example, the United Nations (UNEP, 1994 and 1996a), and the World Industry Council for the Environment (WICE, 1994). An interesting finding is that water consumption is considered significantly less important than energy consumption on a quantitative basis. This is perhaps due to the greater amount of environmental damage which results from the use of energy.

### **(iii) Corporate Environmental Risk Information**

This part of the enquiry considers risk information which may be required by interested parties (see section 3.4(ii)) and attempts to examine the boundaries of useful risk information by considering the views of the respondents, concerning several items of environmental risk information, on a financial, quantitative and qualitative basis. The respondents were required to select a score from 1 (Never) to 3 (Always) to indicate how often they consider each proposed risk should be disclosed. The descriptive statistics (see table 6.3, part A) show that on a financial basis, the respondents consider that environmental information that may cause financial failure (proposition (1); mean = 2.55) should be disclosed frequently. Of the respondents, 64.4% indicated a score of three, whereas only 9.8% reported a score of one. Several other risk disclosures were considered useful and received high mean average scores. These were: financial information that could impose actual liability on a company's lender (proposition (2); mean = 2.50); the risk of site contamination (proposition (3); mean = 2.43) and; environmental information that may reduce financial performance (proposition (4); mean = 2.43). The lowest mean average score was allotted to the risk of environmental influences on companies' markets (proposition (7); mean = 2.15). The risk of environmental influences on companies' markets was shown to be significantly less useful than most of the other propositions (see comparisons in appendix D, table 3, part A).

On a quantitative basis (see table 6.3, part B) the proposition with the highest mean average score was the risk of site contamination (proposition (1); mean = 2.52). Of the respondents 61.7% reported a score of 3, whereas less than 10% reported a score of 1.

**Table 6.3: Descriptive Statistics  
Corporate Environmental Risk Information**

	<b>N</b>	<b>Mean</b>	<b>S.D.</b>	<b>P: 1</b>	<b>P: 3</b>
<b>Part A: Financial Disclosure</b>					
1. Environmental information that may cause financial failure.	82	2.55	0.67	9.8	64.6
2. Financial information that could impose actual liability on a company's lender.	82	2.50	0.69	11.0	61.0
3. The risk of site contamination.	80	2.43	0.67	10.0	52.5
4. Environmental information that may reduce financial performance.	84	2.43	0.68	10.7	53.6
5. The risk of non-compliance with legislation.	79	2.30	0.74	16.5	46.8
6. Environmental factors that could reduce the value of a company's assets.	81	2.28	0.69	13.6	42.0
7. The risk of environmental influences on companies' markets.	80	2.15	0.68	16.3	31.3
<b>Part B: Quantitative Disclosure</b>					
1. The risk of site contamination.	81	2.52	0.67	9.9	61.7
2. The risk of non-compliance with legislation.	79	2.39	0.72	13.9	53.2
3. Environmental information that may cause financial failure.	77	2.33	0.77	18.2	50.6
4. Financial information that could impose actual liability on a company's lender.	75	2.28	0.78	20.0	48.0
5. Environmental factors that could reduce the value of a company's assets.	78	2.21	0.67	14.1	34.6
6. Environmental information that may reduce financial performance.	80	2.20	0.68	15.0	35.0
7. The risk of environmental influences on companies' markets.	76	2.13	0.68	17.1	30.3

**Table 6.3 continued**

	N	Mean	S.D.	P: 1	P: 3
<b>Part C: Qualitative Disclosure</b>					
1. The risk of site contamination.	82	2.49	0.72	13.4	62.2
2. The risk of non-compliance with legislation.	81	2.38	0.75	16.0	54.3
3. Environmental information that may cause financial failure.	78	2.27	0.80	21.8	48.7
4. The risk of environmental influences on companies' markets.	79	2.23	0.70	15.2	38.0
5. Environmental factors that could reduce the value of a company's assets.	79	2.22	0.71	16.5	38.0
6. Environmental information that may reduce financial performance.	81	2.22	0.73	17.3	39.5
7. Financial information that could impose actual liability on a company's lender.	75	2.16	0.81	25.3	41.3
8. None of the above = 3					Non-response = 6
9. Others:					
(i) It is not clear that a reporting company will always be in a position to assess lender's liability / potential liability.					
(ii) This is a very difficult area. BS7750 calls for risk assessment analysis and this is generally, and rightly, confidential information.					
(iii) Depends on the interested parties. Banks / insurers will require much of the above but the public won't.					

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 3-point scale where 1 = Never, 2 = Sometimes, and 3 = Always. P: 1 represents the percentage rating for the frequency of response for 1 (Never). P: 3 represents the percentage rating for the frequency of response for 3 (Always).

Also, the risk of non-compliance with legislation (proposition (2); mean = 2.39) and environmental information that may cause financial failure (proposition (3); mean = 2.33) are regarded as useful to interested parties. The proposition which received the lowest mean average score was the risk of environmental influences on companies' markets (proposition (7); mean = 2.13). Wilcoxon tests (see appendix D, table 3, part B) indicated that the risk of site contamination is regarded as more useful than the

majority of the propositions. However, in most cases, the respondents did not reveal strong preferences among the proposed risk items on a quantitative basis.

On a qualitative basis (see table 6.3, part C) the risk of site contamination (proposition (1); mean = 2.49) is regarded as useful. Also, the risk of non-compliance with legislation (proposition (2); mean = 2.38) is perceived useful by the respondents. The proposition which received the lowest mean average score was financial information that could impose actual liability on a company's lender (proposition (7); mean = 2.16). Again, the risk of site contamination is considered more useful than most of the other proposed risk factors (see appendix D, table 3, part B).

The three types of disclosure were compared for each proposition (see appendix D, table 3, part D). In three cases, disclosure on a financial basis was shown to be more important than either quantitative or qualitative disclosure. However, for more than half of the propositions, the respondents displayed no preference. In summary, this part of the enquiry considers two broad areas: traditional financial risk (such as environmental information that may cause financial failure) applied to environmental issues, and; specific environmental risk (such as the risk of site contamination). Overall, the findings indicate that both traditional financial risk, and specific environmental risk, are important to this group. Disclosure is most useful on a financial basis for traditional risk, but the respondents could not differentiate between types of disclosure for specific environmental risk. These findings suggest that, for this sample group, there is some interest in environmental disclosure on a financial basis, supporting, for example, Bennet *et al.* (1996), and the European Federation of Financial Analysts (EFFAS, 1994). However, some items of risk information, disclosed on a financial basis, may be as

useful if disclosed on another basis, supporting Gray *et al.* (1996a) and the United Nations (UNEP, 1994 and 1996a).

#### **(iv) Quantifiable Corporate Environmental Information**

This part of the enquiry investigates the attitudes of a normative group towards a suggestion that there may be other useful complementary bases, on which quantitative disclosure could be made (see section 3.4(ii)). The respondents were required to indicate a score of 1 (Never) to 3 (Always) to reveal their preferences for the disclosure of information on a financial, quantitative and qualitative basis. On a financial basis, the descriptive statistics (see table 6.4, part A) showed that the highest mean average scores were allotted to environmental incidents (proposition (1); mean = 2.35) and energy consumption (proposition (2); mean = 2.33). The respondents indicated the lowest average score to vehicle miles in relation to product (proposition (10); mean = 2.03). The respondents revealed little preference among the information disclosed on a financial basis (see Wilcoxon tests, appendix D, table 4, part A), except in indicating that energy consumption and environmental incidents are perceived as significantly more useful than several other items.

On a quantitative basis (table 6.4, part B) there is an almost unanimous average score for the first eight propositions ((1) to (8)). The highest mean score was allotted to air emissions (propositions (1); mean = 2.60), with the seven following propositions all receiving similar scores. For air emissions, 65.9% of the respondents reported a score of 3, whereas 5.9% indicated a score of 1. The lowest mean average score was allotted to vehicle miles in relation to product (proposition (10); mean = 2.27). Wilcoxon tests



**Table 6.4: Descriptive Statistics  
Quantifiable Corporate Environmental Information**

	<b>N</b>	<b>Mean</b>	<b>S.D.</b>	<b>P: 1</b>	<b>P: 3</b>
<b>Part A: Financial Disclosure</b>					
1. Environmental incidents.	78	2.35	0.72	14.1	48.7
2. Energy consumption.	77	2.33	0.72	14.3	46.8
3. Local environmental impact.	76	2.28	0.69	13.2	40.8
4. Generation and disposal of waste.	77	2.22	0.70	15.6	37.7
5. Raw material use.	74	2.20	0.74	18.9	39.2
6. Soil contamination and remediation.	76	2.15	0.69	17.1	31.6
7. Air emissions.	76	2.12	0.69	18.4	30.3
8. Water effluents.	76	2.09	0.68	18.4	27.6
9. Noise and odour.	74	2.05	0.64	17.6	23.0
10. Vehicle miles in relation to product.	76	2.03	0.73	25.0	27.6
<b>Part B: Quantitative Disclosure</b>					
1. Air emissions.	85	2.60	0.60	5.9	65.9
2. Environmental incidents.	83	2.57	0.65	8.4	65.1
3. Generation and disposal of waste.	84	2.56	0.61	6.0	61.9
4. Water effluents.	84	2.54	0.63	7.1	60.7
5. Local environmental impact.	84	2.52	0.61	6.0	58.3
6. Raw material use.	81	2.52	0.62	6.2	58.0
7. Energy consumption.	84	2.50	0.61	6.0	56.0
8. Soil contamination and remediation.	85	2.48	0.65	8.2	56.5
9. Noise and odour.	83	2.41	0.61	6.0	47.0
10. Vehicle miles in relation to product.	82	2.27	0.74	17.1	43.9

**Table 6.4 continued**

	N	Mean	S.D.	P: 1	P: 3
<b>Part C: Qualitative Disclosure</b>					
1. Air emissions.	78	2.44	0.70	11.5	55.1
2. Local environmental impact.	81	2.42	0.71	12.3	54.3
3. Environmental incidents.	77	2.40	0.71	13.0	53.2
4. Generation and disposal of waste.	77	2.36	0.73	14.3	50.6
5. Water effluents.	77	2.30	0.73	15.6	45.5
6. Energy consumption.	76	2.30	0.73	15.8	46.1
7. Soil contamination and remediation.	77	2.30	0.75	16.9	46.8
8. Noise and odour.	79	2.29	0.68	12.7	41.8
9. Raw material use.	74	2.27	0.76	18.9	45.9
10. Vehicle miles in relation to product.	75	2.08	0.75	24.0	32.0
11. None of the above = 4	Non-response = 3				
12. Others:					
(i) Levels of product re-cycling.					
(ii) Normalized use against production level.					

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 3-point scale where 1 = Never, 2 = Sometimes, and 3 = Always. P: 1 represents the percentage rating for the frequency of response for 1 (Never). P: 3 represents the percentage rating for the frequency of response for 3 (Always).

(see appendix D, table 4, part B) indicated that the respondents had little regard for vehicle miles in relation to product, as this proposition received significantly lower scores than almost all of the other propositions.

On a qualitative basis, the descriptive statistics (table 6.4, part C) show that air emissions (proposition (1); mean = 2.44) were allotted the highest mean average score. Other measurable quantities for which disclosure is considered important are local environmental impact (proposition (2); mean = 2.42); environmental incidents

(proposition (3); mean = 2.40) and; generation and disposal of waste (proposition (4); mean = 2.36). The measurable quantity which received the lowest mean average score was vehicle miles in relation to product (proposition (10); mean = 2.08). Again, vehicle miles in relation to product was shown to be significantly less important than the majority of propositions (see appendix D, table 4, part C).

Inter-disclosure comparisons (see appendix D, table 4, part D) indicated that quantitative disclosure is preferred to financial and qualitative disclosure for most propositions. This result supports the *status quo* for reporting these items. In summary, vehicle miles in relation to product, and noise and odour are not regarded as useful by the respondents. However, environmental incidents, generation and disposal of wastes, and local environmental impact, are consistently seen as useful. As would be expected, the preferred type of disclosure is quantitative, rather than financial. For water effluents, quantitative and qualitative are shown to be significantly more useful than financial. This provides evidence for disclosure on more than one basis.

#### **(v) Benchmarking Corporate Environmental Performance Information**

The respondents were required to indicate their views concerning benchmarking corporate environmental performance information (see section 3.4(ii)), on a scale from 1 (Never) to 3 (Always). On a financial basis (see table 6.5, part A) legal compliance (proposition (1); mean = 2.11) received the highest mean average score. The lowest mean score was allotted to sustainable development (proposition (3); mean = 1.87). The Wilcoxon tests (appendix D, table 5, part A) revealed a lack of interest in sustainable development. Legal compliance was preferred.

**Table 6.5: Descriptive Statistics  
Benchmarking Corporate Environmental Performance Information**

	N	Mean	S.D.	P: 1	P: 3
<b>Part A: Financial Disclosure</b>					
1. Legal compliance.	74	2.11	0.73	21.6	32.4
2. Industry average.	76	1.93	0.60	21.1	14.5
3. Sustainable development.	74	1.87	0.69	31.1	17.6
<b>Part B: Quantitative Disclosure</b>					
1. Legal compliance.	83	2.46	0.66	8.4	54.2
2. Sustainable development.	80	2.15	0.70	17.5	32.5
3. Industry average.	84	2.13	0.56	9.5	22.6
<b>Part C: Qualitative Disclosure</b>					
1. Legal compliance.	77	2.27	0.72	15.6	42.9
2. Sustainable development.	81	2.07	0.70	21.0	28.4
3. Industry average.	77	2.04	0.60	15.6	19.5
4. None of the above = 6	Non-response = 6				
5. Others:					
(i) Does this mean a comparison with competitors' standards? This could be a useful competitive tool for companies but the present lack of environmental reporting makes benchmarking almost impossible in practice.					
(ii) Benchmarking is by definition an exercise for companies and therefore not necessarily in the public domain; other than a statement "yes, we benchmark".					
(iii) Benchmark against companies earlier environmental performance.					
(iv) Benchmarking may be used but I don't know anyone who knows how to do it!					

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 3-point scale where 1 = Never, 2 = Sometimes, and 3 = Always. P: 1 represents the percentage rating for the frequency of response for 1 (Never). P: 3 represents the percentage rating for the frequency of response for 3 (Always).

On a quantitative basis, the descriptive results (table 6.5, part B) showed that legal compliance (proposition (1); mean = 2.46) again received the highest mean average score. Of the respondents, 54.2% reported a score of 3, whereas only 8.4% indicated a score of 1. The lowest mean average score was allotted to industry average (proposition (3); mean = 2.13). Again, legal compliance was shown to be of relatively major importance and sustainable development of relatively minor importance (see Wilcoxon results, appendix D, table 5, part B).

On a qualitative basis (see table 6.5, part C) legal compliance (proposition (1); mean = 2.27) for the third time received the highest mean average score. The lowest mean score was given to industry average (proposition (3); mean = 2.04). Wilcoxon results (see appendix D, table 5, part C) again emphasised the importance of legal compliance.

Inter-disclosure comparisons (see appendix D, table 5, part D) showed that for both legal compliance, and sustainable development, quantitative disclosure is considered significantly more important than financial disclosure. In summary, legal compliance is regarded, by the respondents, as the most useful benchmark, with a preference for disclosure on a quantitative rather than a financial basis. This could be benchmarked against previous company infringements and/or industry average for infringements (Anglian Water, for example, provides this type of disclosure). Perhaps the reason for the importance of legal compliance, is that it upholds the stewardship function, reflecting some of society's values. It is interesting to see how important this benchmark is, given that it is not onerous on companies at present. These findings suggest that the respondents have the attitude that a "compliance with standards report" would be useful

to interested parties (see Gray, Owen and Maunders, 1987a and 1987b, and; Gray *et al.*, 1996a).

#### **(vi) Corporate Environmental Financial Information**

This part of the enquiry examines the possibility that information traditionally disclosed on a financial basis could also be usefully disclosed, on a quantitative, and/or qualitative basis (see section 3.4(ii)). The respondents were asked to indicate their views on a scale from 1 (Never) to 3 (Always). They were required to rate financial environmental information and its usefulness to interested parties, by indicating the necessary frequency of its disclosure, with respect to the three types of disclosure. On a financial basis, the descriptive statistics (table 6.6, part A) indicated that four proposed items of financial environmental information received high mean average scores from the respondents. These were: environmental liabilities (proposition (1); mean = 2.57); environmental fines and negotiated settlements (proposition (2); mean = 2.52), and; environmental spending (proposition (3); mean = 2.49). For all three of these items, the percentage ratings showed that 50% or more of the respondents voted 3 and less than 10% of them voted 1. Donations to environmental charities (proposition (6); mean = 2.07) received the lowest mean average score. Given that this is a form of mandatory disclosure, this is disappointing. However, the finding may simply indicate that this type of disclosure is not useful. The relative lack of importance attached to donations to environmental charities, environmental benefits and opportunities, and government environmental taxes and charges was emphasised by the Wilcoxon tests (appendix D, table 6, part A).

**Table 6.6: Descriptive Statistics  
Corporate Environmental Financial Information**

	<b>N</b>	<b>Mean</b>	<b>S.D.</b>	<b>P: 1</b>	<b>P: 3</b>
<b>Part A: Financial Disclosure</b>					
1. Environmental liabilities.	81	2.57	0.63	7.4	64.2
2. Environmental fines and negotiated settlements.	84	2.52	0.59	4.8	57.1
3. Environmental spending.	83	2.49	0.61	6.0	55.4
4. Government environmental taxes and charges.	82	2.40	0.66	9.8	50.0
5. Environmental benefits and opportunities.	80	2.26	0.63	10.0	36.3
6. Donations to environmental charities.	83	2.07	0.68	19.3	26.5
<b>Part B: Quantitative Disclosure</b>					
1. Environmental liabilities.	78	2.41	0.67	10.3	51.3
2. Environmental benefits and opportunities.	76	2.38	0.65	9.2	47.4
3. Environmental fines and negotiated settlements.	77	2.36	0.63	7.8	44.2
4. Environmental spending.	77	2.35	0.64	9.1	44.2
5. Government environmental taxes and charges.	76	2.18	0.67	14.5	32.9
6. Donations to environmental charities.	77	2.13	0.71	19.5	32.5
<b>Part C: Qualitative Disclosure</b>					
1. Environmental liabilities.	71	2.18	0.74	19.7	38.0
2. Environmental fines and negotiated settlements.	70	2.11	0.77	24.3	35.7
3. Environmental benefits and opportunities.	73	2.08	0.70	20.5	28.8
4. Environmental spending.	73	2.08	0.72	21.9	30.1
5. Government environmental taxes and charges.	70	1.97	0.76	30.0	27.1
6. Donations to environmental charities.	72	1.76	0.70	38.9	15.3
7. None of the above = 2	Non-response = 4				

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 3-point scale where 1 = Never, 2 = Sometimes, and 3 = Always. P: 1 represents the percentage rating for the frequency of response for 1 (Never). P: 3 represents the percentage rating for the frequency of response for 3 (Always).

On a quantitative basis, the descriptive statistics (table 6.6, part B) showed that environmental liabilities (proposition (1); mean = 2.41) received the highest mean score. The lowest mean average score was allotted to donations to environmental charities (proposition (6); mean = 2.13). Again, the respondents attached significantly less importance to donations to environmental charities and government environmental taxes and charges (see appendix D, table 6, part B).

On a qualitative basis, the descriptive statistics (table 6.6, part C) indicated that environmental liabilities (proposition (1); mean = 2.18) received the highest mean average score. The lowest mean score was given to donations to environmental charities (proposition (6); mean = 1.76). The respondents again allotted significantly lower scores to this item than to the other propositions (see appendix D, table 6, part C).

The inter-disclosure comparisons (see Wilcoxon tests, appendix D, table 6, part D) showed that qualitative disclosure is considered less useful than either financial, or quantitative disclosure. However, the respondents seemed unable to discriminate between financial and quantitative disclosure. To summarise, the findings have shown that disclosure of environmental liabilities, is perceived as useful by the normative group. However, donations to environmental charities are regarded as much less useful, as supported by the Wilcoxon results. The inter-disclosure comparisons indicate that in the majority of cases, financial disclosure is significantly preferable to quantitative disclosure, and that in all cases, quantitative disclosure is preferable to qualitative. This provides some evidence for disclosure of at least some of the propositions on other than/as well as the traditional financial basis.



## **(vii) Corporate Environmental Management Information**

The respondents were asked to rate the usefulness of environmental management information to interested parties (see section 3.4(ii)) by indicating the necessary frequency of disclosure of each of the three types of disclosure - financial, quantitative and qualitative. They were required to select a score from 1 (Never) to 3 (Always). On a financial basis the descriptive statistics (table 6.7, part A) revealed that compliance with legislation (proposition (1); mean = 2.37) received the highest mean average score. Less useful environmental management information was accident and emergency response (proposition (11); mean = 2.06) and environmental integration of business (proposition (10); mean = 2.08). Compliance with legislation is considered significantly more useful than several of the other suggested propositions (appendix D, table 7, part A).

On a quantitative basis the descriptive statistics (table 6.7, part B) showed that four propositions are seen as very useful to interested parties. These are: compliance with legislation (proposition (1); mean = 2.64); environmental impact assessment (proposition (2); mean = 2.53); setting measurable environmental targets and objectives (proposition (3); mean = 2.52) and; health and safety (proposition (4); mean = 2.43). For all these propositions, more than 50% of the respondents reported a score of 3, whereas less than 10% indicated a score of 1. The lowest mean score was allotted to environmental integration of business (proposition (11); mean = 2.18). Again, the Wilcoxon results (appendix D, table 7, part B) showed that compliance with legislation is regarded as significantly more useful than the majority of propositions.

**Table 6.7: Descriptive Statistics  
Corporate Environmental Management Information**

	<b>N</b>	<b>Mean</b>	<b>S.D.</b>	<b>P: 1</b>	<b>P: 3</b>
<b>Part A: Financial Disclosure</b>					
1. Compliance with legislation.	74	2.37	0.75	16.2	52.7
2. Setting measurable environmental targets and objectives.	75	2.28	0.67	12.0	40.0
3. Environmental impact assessment.	75	2.27	0.70	14.7	41.3
4. Land contamination and remediation.	77	2.26	0.72	15.6	41.6
5. Environmental management system.	75	2.19	0.65	13.3	32.0
6. Hazard assessment.	75	2.13	0.70	18.7	32.0
7. Compliance with industry standards.	73	2.12	0.73	20.5	32.9
8. Risk assessment.	74	2.11	0.73	21.6	32.4
9. Health and safety.	73	2.10	0.71	20.5	30.1
10. Environmental integration of business.	74	2.08	0.72	21.6	29.7
11. Accident and emergency response.	72	2.06	0.71	22.2	27.8
<b>Part B: Quantitative Disclosure</b>					
1. Compliance with legislation.	83	2.64	0.76	4.8	68.7
2. Environmental impact assessment.	80	2.53	0.62	6.3	58.8
3. Setting measurable environmental targets and objectives.	82	2.52	0.61	6.1	58.5
4. Health and safety.	81	2.43	0.67	9.9	53.1
5. Risk assessment.	79	2.41	0.71	12.7	53.2
6. Hazard assessment.	80	2.38	0.70	12.5	50.0
7. Environmental management system.	79	2.33	0.61	7.6	40.5
8. Accident and emergency response.	78	2.30	0.65	10.3	39.7
9. Land contamination and remediation.	82	2.29	0.64	9.8	39.0
10. Compliance with industry standards.	80	2.28	0.66	11.3	38.8
11. Environmental integration of business.	78	2.18	0.64	12.8	30.8

**Table 6.7 continued**

	<b>N</b>	<b>Mean</b>	<b>S.D.</b>	<b>P: 1</b>	<b>P: 3</b>
<b>Part C: Qualitative Disclosure</b>					
1. Compliance with legislation.	76	2.51	0.77	17.1	68.4
2. Environmental impact assessment.	82	2.43	0.67	9.8	52.4
3. Setting measurable environmental targets and objectives.	78	2.31	0.71	14.1	44.9
4. Hazard assessment.	80	2.29	0.78	20.0	48.8
5. Risk assessment.	77	2.27	0.81	22.1	49.4
6. Environmental management system.	81	2.26	0.67	12.3	38.3
7. Health and safety.	81	2.26	0.76	18.5	44.4
8. Accident and emergency response.	78	2.24	0.71	15.4	39.7
9. Compliance with industry standards.	79	2.24	0.72	16.5	40.5
10. Land contamination and remediation.	79	2.18	0.73	19.0	36.7
11. Environmental integration of business.	80	2.14	0.63	13.8	27.5
12. None of the above = 4	Non-response = 4				
13. Others:					
(i) This is mostly for internal use only.					
(ii) Depends very much on the interested parties, e.g. regulators, staff will require more detailed information than public, customers.					

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 3-point scale where 1 = Never, 2 = Sometimes, and 3 = Always. P: 1 represents the percentage rating for the frequency of response for 1 (Never). P: 3 represents the percentage rating for the frequency of response for 3 (Always).

On a qualitative basis, the descriptive statistics (table 6.7, part C) revealed that compliance with legislation (proposition (1); mean = 2.51) and environmental impact assessment (proposition (2); mean = 2.43) are perceived as useful management information which should be frequently disclosed. The lowest mean average score was allotted to environmental integration of business (proposition (11); mean = 2.14). Again, compliance with legislation is preferred to most of the proposed items of management information (see appendix D, table 7, part C).

The inter-disclosure comparisons (see appendix D, table 7, part D) showed that in several cases, quantitative disclosure is perceived as significantly more useful than financial disclosure. In summary, compliance with legislation and environmental impact assessment, are perceived as useful disclosure by the respondents, as confirmed by the Wilcoxon results. However, environmental integration of business is perceived as less useful. Inter-disclosure comparisons suggest that there is preference for quantitative disclosure over financial for some of the information. These findings again suggest that a "compliance with standards report" (see Gray *et al.*, 1987a; 1987b, and; 1996a) would represent useful disclosure. Also, the United Nations (UNEP, 1994 and 1996a) suggest that disclosure of environmental impact assessment would be useful to interested parties.

### **6.2.2 Attitudes Towards Corporate Environmental Reporting**

This section of the enquiry examines the attitudes of the normative group towards environmental reports and reporting, and is divided into two parts: the assessment of environmental incident and their reporting, and; the time period and communication of corporate environmental reporting.

#### **(i) Assessing and Reporting Environmental Incidents**

In relation to which agents would be best suited to reporting and/or assessing environmental incidents (see section 3.4 (iii)). The respondents were required to state which agents should assess and/or report environmental incidents, using a scale of 1 (Never) to 3 (Always). With respect to the assessment of environmental incidents, the descriptive statistics (table 6.8, part A) revealed that company employees (proposition

**Table 6.8: Descriptive Statistics  
Assessing and Reporting Environmental Incidents**

	N	Mean	S.D.	P: 1	P: 3
<b>Part A: Assess Impact</b>					
1. Company employees.	86	2.36	0.70	12.8	48.8
2. Local Authority.	83	2.17	0.58	9.6	26.5
3. Quango eg. National Rivers Authority.	84	2.00	0.49	11.9	11.9
4. Independent consultants.	85	1.97	0.36	8.2	4.7
5. Local Authority and Independent consultants.	80	1.94	0.40	11.3	5.0
6. The Department of the Environment.	82	1.87	0.54	22.0	8.5
7. The Department of Agriculture.	80	1.84	0.49	21.3	5.0
8. Central Government.	81	1.63	0.49	37.0	0.0
9. The Department of Trade and Industry.	80	1.61	0.49	38.8	0.0
<b>Part B: Report Impact</b>					
1. Company employees.	86	2.40	0.72	14.0	53.5
2. Local Authority.	80	2.14	0.55	8.8	22.5
3. Quango eg. National Rivers Authority.	82	2.09	0.57	12.2	20.7
4. The Department of the Environment.	79	1.99	0.57	16.5	15.2
5. Local Authority and Independent consultants.	81	1.95	0.50	14.8	9.9
6. The Department of Agriculture.	79	1.89	0.55	21.5	10.1
7. Independent consultants - paid by Company.	79	1.80	0.52	25.3	5.1
8. Central Government.	79	1.72	0.60	35.4	7.6
9. The Department of Trade and Industry.	78	1.65	0.55	38.5	3.8
10. None of the above = 5	Non-response = 3				
11. Others:					
(i) Forestry Authority.					
(ii) Impossible to generalise - depends on company expertise and nature of impact. The duties of regulators are already defined by law.					
(iii) Company Management / Directors.					
(iv) This will depend on the nature of the incident. There should be a system in place that ensures that any incident is followed up in an appropriate manner.					
(v) It depends on the nature and scale of the incident. Similar comment made 4 times.					

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 3-point scale where 1 = Never, 2 = Sometimes, and 3 = Always. P: 1 represents the percentage rating for the frequency of response for 1 (Never). P: 3 represents the percentage rating for the frequency of response for 3 (Always).

(1); mean = 2.36) are considered important agents in assessment. However, both the Department of Trade and Industry (proposition (9); mean = 1.61) and central government (proposition (8); mean = 1.63) are perceived as inappropriate agents for the assessment of environmental incidents. There was extensive rejection of the null hypothesis for the Wilcoxon tests (61% of pairwise cases, see appendix D, table 8, part A) which indicated that company employees are significantly more important as assessors of the impact of environmental incidents, than most of the other proposed agents, whereas the Department of Trade and Industry, and central government, are considered relatively less important.

With respect to the agents who should report the impact of environmental incidents, the descriptive statistics (table 6.8, part B) showed that company employees (proposition (1); mean = 2.40) are considered important reporters of the information. The Department of Trade and Industry (proposition (9); mean = 1.65) received the lowest mean average score. Again, strong rejection of the null hypothesis in Wilcoxon tests (appendix D, table 8, part B) showed that company employees are perceived as significantly more important as reporters of the impact of environmental incidents, than any of the other proposed agents, whereas the Department of Trade and Industry is viewed as far less important.

Assessing and reporting roles were compared for each proposition (see appendix D, table 8, part C). Only in one case did a significant statistic indicate preference, in that environmental consultants are seen as more appropriate for reporting, than assessing, the impact of an environmental incident (note that nearly 50% of this sample is made up of environmental consultants). To summarise, the findings for this part of the enquiry indicate that company employees are the most appropriate agents to assess and/or report environmental incidents, as confirmed by the Wilcoxon tests. This supports the Ceres

Principles (CERES, 1992). As agents, employees would, it seems, have a bias in this area. Central Government and the Department of Trade and Industry are firmly rejected for both assessment and reporting. Wilcoxon tests comparing each agent as to their fitness for reporting or assessing, indicated that independent consultants should report rather than assess.

## **(ii) Time Period and Communication of Corporate Environmental Reporting**

The respondents were asked to indicate their views on nine combinations of time period and instruments which could be used for corporate environmental disclosure (see section 3.4(iv)), using a scale of 1 (Never) to 3 (Always). The descriptive statistics (see table 6.9) showed that environmental information communicated within the published company annual report (proposition (1); mean = 2.57) is perceived as the most appropriate combination of time period and disclosure instrument. These findings are consistent with Harte and Owen (1992), Gray *et al.* (1995), Hines (1988), the European Federation of Financial Analysts (EFFAS, 1994), and Touche Ross (1990). A stand alone published environmental company report on an annual basis (proposition (2); mean = 2.35) is also seen as appropriate for disclosure.

The time period and communication of corporate environmental disclosure receiving the lowest mean average score was an annual stand alone published company environmental report plus an interim environmental statement every 3 months (proposition (9); mean = 1.54). Of the respondents, 52.1% reported a score of 1, as opposed to 5.6% who recorded a score of 3. This finding suggests that information overload is a distinct problem.

**Table 6.9: Descriptive Statistics  
Time Period and Communication of Corporate Environmental Reporting**

	N	Mean	S.D.	P: 1	P: 3
1. Environmental information within the published Company annual report.	85	2.57	0.52	1.2	57.6
2. Stand alone published environmental company report annually.	82	2.35	0.71	13.4	48.8
3. Environmental information within the published Company annual report plus the half yearly Interim statement.	82	2.06	0.65	18.3	24.4
4. Specially published Company environmental report at company's discretion.	82	2.02	0.57	14.6	17.1
5. Press release at company's discretion.	82	1.99	0.58	17.1	15.9
6. Annual stand alone published Company environmental report plus an Interim environmental statement every 6 months.	78	1.76	0.63	34.6	10.3
7. Stand alone published environmental company report every 6 months.	69	1.65	0.59	40.6	5.8
8. Stand alone published environmental company report every 3 months.	66	1.61	0.61	45.5	6.1
9. Annual stand alone published Company environmental report plus an Interim environmental statement every 3 months.	71	1.54	0.61	52.1	5.6
10. None of the above = 1                      Non-response = 5					
11. Others:					
(i) Recommend site environmental reports for employees / communities annually and environmental corporate report either within or in addition to the annual company report - depending on size of the company.					

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 3-point scale where 1 = Never, 2 = Sometimes, and 3 = Always. P: 1 represents the percentage rating for the frequency of response for 1 (Never). P: 3 represents the percentage rating for the frequency of response for 3 (Always).

There is further evidence for the problems of information overload in that the respondents attached significantly less importance to the stand alone published company environmental report plus an interim environmental statement every 3 months. These findings support the idea that the respondents prefer corporate environmental disclosure on an annual basis. The choice of disclosure instrument is flexible, in that either



inclusion in the annual report and/or a separate environmental report, is considered the most useful approach to disclosing information. These results support the survey of current corporate environmental reporting practice in section 3.3.1, and are reflected in the views of the Advisory Committee on Business and the Environment (ACBE, 1996a). Statistical comparisons show that environmental information within the published company annual report, and a stand alone published company environmental report on an annual basis, are considered significantly more useful to interested parties than the other proposed combinations (see appendix D, table 9).

As the respondents demonstrated such varying preferences for the time period and communication of corporate environmental disclosure, a factor analysis is useful in identifying any underlying groups representing relationships between the propositions.<sup>1</sup> The analysis will construct a small number of factors which convey a large proportion of the information present in the total number of variables (Jaeger, 1990). The results (see table 6.10) show that the nine time periods and communication propositions load onto three factors, which account for 75.0% of the variation in the data. An analysis of the factor loadings reveals that they seem to represent the following:

- (i) the preferred environmental reporting time period and communication (propositions (1), (2) and (3)) (note that SSAP18, Accounting for Contingencies, could result in interim reporting for environmental contingencies).
- (ii) reporting at companies' discretion (propositions (4) and (5)).
- (iii) reporting which is too frequent (propositions (6), (7) (8) and (9)).

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<sup>1</sup> The factor analysis method of data reduction allows a parsimonious representation of the information to be attained. In this case, a varimax orthogonal rotation was used, and all the factors displayed eigenvalues greater than 1.

**Table 6.10: Factor Matrix: Varimax Orthogonal Rotation  
Time Period and Communication of Corporate Environmental Reporting**

	Factor		
	1	2	3
1. Environmental information within the published Company annual report.			0.7154
2. Stand alone published environmental company report annually.			0.7348
3. Environmental information within the published Company annual report plus the half yearly Interim statement.			0.7744
4. Specially published Company environmental report at company's discretion.		0.8397	
5. Press release at company's discretion.		0.8800	
6. Annual stand alone published Company environmental report plus an Interim environmental statement every 6 months.	0.6001		
7. Stand alone published environmental company report every 6 months.	0.8500		
8. Stand alone published environmental company report every 3 months.	0.8732		
9. Annual stand alone published Company environmental report plus an Interim environmental statement every 3 months.	0.8356		
Cumulative Percentage of Variance Explained	45.7	61.1	75.0

Only the largest factor loadings are shown for each variable.

The factors seem to represent a ranking of preferences for time period and communication of environmental disclosure. Factor (i), is consistent with the recommendations of the Advisory Committee on Business and the Environment (ACBE 1996a and 1996b). Factor (ii) is essential for disclosure between periods. Factor (iii) concerns disclosure which is more frequent, again suggesting that too frequent disclosure is not useful. All these findings, considered together, would suggest that current corporate environmental disclosure, with regard to timing and communication, conforms

with *a priori* predictions of the normative group of respondents and with the *status quo*. Too frequent disclosure would perhaps lead to information overload.

### **6.2.3 Attitudes Towards the Current Framework for Corporate Environmental Disclosure**

This section of the enquiry considers the attitudes of the normative group towards current disclosure practice.

#### **(i) Users of Corporate Environmental Disclosure**

Using a scale of 1 (Not Important) to 5 (Very Important), the respondents to the questionnaire were asked to indicate their views on 17 possible user groups of corporate environmental disclosure (see section 3.4(v)). From the descriptive statistics (table 6.11), the respondents selected legislators and regulators (proposition (1); mean = 4.23) as an important audience for corporate environmental disclosure. Other groups of users who were seen to make use of environmental information are: local communities (proposition (2); mean = 4.18) (important for the concept of transparency, see Gray, 1992 and Gray *et al.*, 1993); employees (proposition (3); mean = 4.17); customers (proposition (5); mean = 3.97) and; insurance companies (proposition (6); mean = 3.95). For all of these, more than 70% of the respondents reported a score 4 or 5, whereas less than 10% of the respondents indicated a score of 1 or 2. The proposition with the lowest mean average score was industry associations (proposition (17); mean = 3.09). The descriptive statistics suggest that all 17 user groups are important. The respondents showed strong preferences among user groups (see Wilcoxon results, appendix D, table 10), for legislators and

**Table 6.11: Descriptive Statistics  
Users of Corporate Environmental Disclosure**

	N	Mean	S.D.	P: 1, 2	P: 4, 5
1. Legislators and regulators.	86	4.23	1.05	5.8	76.8
2. Local communities.	87	4.18	0.93	4.6	77.0
3. Employees.	86	4.17	1.08	7.0	70.9
4. Shareholders.	86	4.07	1.04	12.8	75.6
5. Customers.	87	3.97	0.93	4.6	71.3
6. Insurance companies.	86	3.95	0.97	7.0	72.1
7. Ethical investors.	85	3.86	1.30	16.5	62.4
8. Environmental groups.	87	3.84	1.04	11.5	59.7
9. Quangos eg. National Rivers Authority.	83	3.82	1.12	10.8	63.8
10. Local government.	87	3.74	1.12	12.6	60.9
11. Potential investors.	86	3.71	1.22	15.1	55.8
12. Banks.	86	3.69	1.12	15.1	58.2
13. Media.	87	3.56	1.09	16.1	52.9
14. Suppliers.	87	3.37	1.10	20.7	43.7
15. Stock market.	86	3.34	1.29	25.6	48.8
16. Central government.	87	3.18	1.18	29.9	37.9
17. Industry associations.	86	3.09	1.07	29.1	32.5
18. Others:					
(i) Depends on individual circumstances.					
(ii) Scientific Community.					
(iii) For anyone who wants it					

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 5-point scale where 1 = Not Important, 3 = Important, and 5 = Very Important. P: 1, 2 represents the percentage rating for the combined frequency of response for 1 (Not Important) and 2. P: 4, 5 represents the percentage rating for the combined frequency of response for 4 and 5 (Very Important).

regulators, and local communities, which are perceived as relatively more important users of environmental disclosure than most of the other proposed users. Industry associations, and central government, are considered relatively unimportant.

Factor analysis (table 6.12), was performed which showed that the propositions loaded onto four factors.<sup>2</sup> The association between the 17 user groups accounted for 73.3% of the variation in the data. The analysis indicated that there were several general attitude groups :

- (i) financial stakeholder audience (propositions (6), (7), (11), (12), and (15))
- (ii) primary stakeholder audience (propositions (2), (3), (4), (5), and (14))
- (iii) government and regulatory audience (propositions (1), (9), (10), and (16))
- (iv) public relations audience (propositions (8), (3) and (17)).

Some of these groupings coincide with the frameworks discussed in section 3.4(v). Factor (i), a financial audience, is not new, but note how shareholders are not included as they can be perceived as a slightly different audience, as their position may be comparable to those in factor (ii). Gray *et al.* (1987a) cites the user groups in corporate social reporting as the local communities, employees, consumers/clients. This is very similar to factor (ii), the primary stakeholder audience, especially if it is accepted that shareholders may have an interest in social issues. Note that factor (iii) isolates the government as a major group, as do the frameworks discussed above. A group which has received much attention, is factor (iv), a public relations audience (see Welford and

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<sup>2</sup> Again, a varimax orthogonal rotation was used and the eigenvalues were not less than 1 for any of the factors.

**Table 6.12: Factor Matrix: Varimax Orthogonal Rotation  
Users of Corporate Environmental Disclosure**

	Factor			
	1	2	3	4
1. Legislators and regulators.			0.8025	
2. Local communities.		0.5895		
3. Employees.		0.5684		
4. Shareholders.		0.7074		
5. Customers.		0.8141		
6. Insurance companies.	0.8677			
7. Ethical investors.	0.6459			
8. Environmental groups.				0.7887
9. Quangos eg. National Rivers Authority.			0.8024	
10. Local government.			0.8799	
11. Potential investors.	0.7327			
12. Banks.	0.8589			
13. Media.				0.8407
14. Suppliers.		0.8020		
15. Stock market.	0.8091			
16. Central government.			0.7221	
17. Industry associations.				0.6734
Cumulative Percentage of Variance Explained	44.3	56.5	66.6	73.3

Only the largest factor loadings are shown for each variable.

Gouldson, 1993). As discussed in section 3.4(i), Benston (1982a) and Rockness (1985) suggest that corporate social reporting is perhaps no more than a public relations exercise. The Advisory Committee on Business and the Environment (ACBE, 1996a) has made the same assertions to corporate environmental reporting. The factor analysis provides some support for their views.

The findings confirm that the audience for corporate environmental information is greater than that for financial reporting. The "Business Strategy for Sustainable Development" report (IISD, 1992) has suggested the notion of traditional stakeholders and emerging stakeholders. The results from this analysis would seem to confirm their views. The interesting aspect is that financial stakeholders do not take precedence over the emerging stakeholders, as the Wilcoxon results revealed. The combination of these results with those of the factor analysis would suggest that a primary group of users exists, factor (ii), with other groups, factor (i), (iii), and (iv), also being important, but to a relatively lesser degree.

## **(ii) Bearing the Cost of Corporate Environmental Disclosure**

The respondents were required to indicate their level of agreement with four suggestions for cost allocation (see section 3.4(vi)) by selecting a score from 1 (Strongly Disagree) to 5 (Strongly Agree). The descriptive statistics (see table 6.13) revealed that respondents strongly agree that the company should absorb the full cost of environmental disclosure (proposition (1); mean = 4.36). Of the respondents, 83.7% indicated a score of 4 or 5, as opposed to only 3.5% who reported a score of 1 or 2. This is consistent with financial reporting. Furthermore, the proposition receiving the lowest mean average score was the government *via* a system of company tax credits (proposition (4); mean = 2.31). This is a disappointing result,<sup>3</sup> as such a system might have gone some way to encouraging voluntary corporate environmental disclosure. The respondents showed a preference for the company absorbing the full cost (see appendix D, table 11).

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<sup>3</sup> An alternative view may be that this is not disappointing, in that companies may produce a lot of "meaningless drivel" simply to gain tax credits.

**Table 6.13: Descriptive Statistics  
Bearing the Cost of Corporate Environmental Disclosure**

	N	Mean	S.D.	P: 1, 2	P: 4, 5
1. The company should absorb the full cost.	86	4.36	0.84	3.5	83.7
2. There should be an allocation of cost between the company and interested party.	82	2.70	1.21	39.0	24.4
3. The interested party should pay.	80	2.44	1.11	47.5	16.3
4. The Government via a system of company tax credits.	80	2.31	1.41	57.5	25.1
5. Others:					
(i) Depends on who the interested party is.					
(ii) Customers in a supply chain when demanding disclosure.					
(iii) Depends on the company (size, resources, profit) type, detail and amount of information requested, who the interested party is.					

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 5-point scale where 1 = Strongly Disagree, 3 = Neutral, and 5 = Strongly Agree. P: 1, 2 represents the percentage rating for the combined frequency of response for 1 (Strongly Disagree) and 2. P: 4, 5 represents the percentage rating for the combined frequency of response for 4 and 5 (Strongly Agree).

The indisputable conclusion is that the company should absorb the full cost of corporate environmental disclosure as is the case for financial reporting. This supports much of the literature cited in section 3.4(vi) and more importantly agrees with the views of the Advisory Committee on Business and the Environment (ACBE, 1996a and 1996b) who are the leading body advising the government on environmental reporting. However, a major concern is that companies may only produce reports which are to their commercial advantage. Benston (1982a, and 1982b) suggests that this is the only reason companies report socially.



### **(iii) Possible Qualitative Characteristics of Corporate Environmental Disclosure**

This section considers the suitability of applying these qualitative characteristics to another area of corporate disclosure, namely, that of the environment (see section 3.4(vii)). The respondents were asked to rate each of these characteristics using a scale of 1 (Not Important) to 5 (Very Important). The descriptive statistics (see table 6.14) revealed that all the qualitative characteristics are of at least some importance to the respondents. Those of particular note are: a true and fair view<sup>4</sup> (proposition (1); mean = 4.55); understandability (proposition (2); mean = 4.53); relevance (proposition (3); mean = 4.51); reliability (proposition (5); mean = 4.36) and; freedom from error (proposition (6); mean = 4.31). For all of these propositions, over 80% of the respondents reported a score of 4 or 5, whereas none of them reported a score of 1 or 2. The proposition receiving the lowest mean vote was prudence (proposition (18); mean = 3.59). However, 51.3% of the respondents reported a score of 4 or 5 even for this proposition. A true and fair view, understandability, relevance, faithful representation, and reliability were shown to be significantly more important than the majority of qualitative characteristics from the Wilcoxon tests (see appendix D, table 12). This is consistent with the literature discussed in section 3.4(vii). The results also confirm that some characteristics, such as prudence and predictive value are relatively less important for environmental reporting.

As the respondents showed such differing preferences for the possible qualitative characteristics of corporate environmental disclosure, a factor analysis was used to identify any underlying groups which may represent relationships between the

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<sup>4</sup> Technically, this is not a qualitative characteristic, see for example, IASC (1989) and ASB (1995a).

**Table 6.14: Descriptive Statistics  
Possible Qualitative Characteristics of Corporate Environmental Disclosure**

	N	Mean	S.D.	P: 1, 2	P: 4, 5
1. A true and fair view.	83	4.55	0.63	0.0	92.8
2. Understandability.	88	4.53	0.76	0.0	84.1
3. Relevance.	87	4.51	0.73	0.0	86.2
4. Faithful Representation.	84	4.43	0.77	1.2	85.7
5. Reliability.	84	4.36	0.79	0.0	81.0
6. Freedom from error.	84	4.31	0.73	0.0	84.5
7. Consistency.	84	4.19	0.78	1.2	79.3
8. Valid description.	85	4.17	0.84	1.2	74.1
9. Substance Over Form	82	4.12	1.01	4.9	75.6
10. Neutrality.	83	3.96	1.10	9.6	68.7
11. Completeness.	83	3.88	0.83	3.6	66.3
12. Corresponding information for the previous period.	85	3.84	0.81	1.2	60.0
13. Confirmation of information.	84	3.83	1.06	9.5	60.7
14. Timeliness.	83	3.76	0.92	6.0	55.4
15. Comparability.	85	3.68	1.01	9.4	57.6
16. Materiality.	75	3.65	1.03	8.0	48.0
17. Predictive value.	86	3.63	0.95	9.3	55.8
18. Prudence.	80	3.59	1.08	11.3	51.3
19. Others:					
(i) I don't think these are realistically achievable at present					
(ii) Independent verification					

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 5-point scale where 1 = Not Important, 3 = Important, and 5 = Very Important. P: 1, 2 represents the percentage rating for the combined frequency of response for 1 (Not Important) and 2. P: 4, 5 represents the percentage rating for the combined frequency of response for 4 and 5 (Very Important).

characteristics.<sup>5</sup> The results (table 6.15) show that the 18 qualitative characteristics load onto three factors. The factors accounted for 69% of the variation in the data. The factors appear to represent the following :

- (i) primary qualitative characteristics of a conceptual framework for corporate environmental reporting (propositions (2), (3), (4), (5), (6), and (8));
- (ii) secondary qualitative characteristics of a conceptual framework for corporate environmental reporting (propositions (9), (10), (11), (13), (15), (16), (17), and (18)) and;
- (iii) primary qualitative characteristics for a true and fair view (propositions (1), (7), (12), and (14)).

Factor (i), primary qualitative characteristics, indicates that the user should be interested in reliable information, as this factor includes three characteristics which are associated with reliability. Factor (ii), secondary qualitative characteristics, seems to contain qualitative characteristics which are deemed relatively less important. Factor (iii), primary qualitative characteristics for a true and fair view, contains the qualitative characteristics which seem to represent to the respondents the main ingredients of a true and fair view.

In summary, the findings indicate that all the possible qualitative characteristics are important to this group of respondents. The respondents recorded very high scores and the percentage ratings for four or five were in the region of 50% or above. The

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<sup>5</sup> The factor analysis performed was the same as in previous cases. This methodology will be appropriate for further factor analyses throughout the thesis.

**Table 6.15: Factor Matrix: Varimax Orthogonal Rotation  
Possible Qualitative Characteristics of Corporate Environmental Disclosure**

	Factor		
	1	2	3
1. A true and fair view.			0.6775
2. Understandability.	0.8917		
3. Relevance.	0.9016		
4. Faithful Representation.	0.8296		
5. Reliability.	0.7334		
6. Freedom from error.	0.5728		
7. Consistency.			0.6513
8. Valid description.	0.6233		
9. Substance Over Form		0.6984	
10. Neutrality.		0.7746	
11. Completeness.		0.5694	
12. Corresponding information for the previous period.			0.8556
13. Confirmation of information.		0.6031	
14. Timeliness.			0.7172
15. Comparability.		0.6743	
16. Materiality.		0.7575	
17. Predictive value.		0.7623	
18. Prudence.		0.7742	
Cumulative Percentage of Variance Explained	47.9	60.9	69.0

Only the largest factor loadings are shown for each variable.

characteristics a true and fair view, understandability, reliability, faithful representation and relevance were shown to be significantly more important than the others. The factor analysis allowed the classification of the characteristics into three groups. Therefore, the qualitative characteristics of financial reporting could be applied to environmental reporting (see Gray *et al.*, 1996b). The Wilcoxon results and the factor analysis have shown preferences among qualitative characteristics, supporting Lunt (1981).

#### **(iv) Proposed Elements of a Conceptual Framework for Corporate Environmental Reporting**

This part of the enquiry investigates the possibility of using natural resources as the elements of a conceptual framework for corporate environmental reporting (see section 3.4(viii)). The respondents were asked to indicate their attitudes on a scale from 1 (Strongly Disagree) to 5 (Strongly Agree). The descriptive statistics (see table 6.16) revealed that all four of the possible elements received high mean average scores, as follows: air (proposition (1); mean = 4.65); water (proposition (2); mean = 4.63); land (proposition (3); mean = 4.61) and; sound (proposition (4); mean = 4.13). For propositions (1) to (3) more than 90% of the respondents reported a score of 4 or 5, as opposed to none indicating a score of 1 or 2. These results emphasise the importance of natural resources as a basis for recognition and measurement of environmental disclosure. However, sound received significantly lower scores than the other elements (see appendix D, table 13), although this must be considered in relation to consistently high voting for all elements.

To summarise, the statistical analysis supports the view that the recognition and measurement of natural resources, air, land and water, should be useful in environmental disclosure. Their inclusion as proposed elements in a conceptual framework for corporate environmental reporting from this group of respondents represents a solid basis from which to proceed, supporting the views advocated by Ceres (CERES, 1992), Gray *et al.* (1993), Hardin (1993), World Industry Council for the Environment (WICE, 1994), Ball and Bell (1995), and the Eco-Management and Audit Scheme (see EAAR, March 1996b and May 1996a).

**Table 6.16: Descriptive Statistics  
Proposed Elements of a Conceptual Framework for Corporate Environmental Reporting**

	N	Mean	S.D.	P: 1, 2	P: 4, 5
1. Air.	83	4.65	0.61	0.0	92.8
2. Water.	82	4.63	0.66	0.0	90.3
3. Land.	82	4.61	0.64	0.0	91.5
4. Sound.	82	4.13	0.91	3.7	71.9
5. Others:					
(i) Energy use / resources / conservation. Comment made 6 times.					
(ii) Waste Management / recycling. Comment made 6 times.					
(iii) Visual impact. Comment made 3 times.					
(iv) Resource use. Continuous improvement. Comment made 3 times.					
(v) Dependent on company which may be most appropriate. Comment made 2 times.					
(vi) Odour. Comment made 2 times.					
(vii) Environment / Aesthetic (Visual impact on countryside).					
(viii) Health and safety.					
(ix) Impact on sustainable development. Impact on climate change.					
(x) Social environment.					
(xi) Wildlife / Archaeology / Community interest.					
(xii) Nuisance, aesthetics					
(xiii) Overview of existing position regardless of topic.					
(xiv) Incidents and near misses					
(xv) Radiation, energy, total environmental burden, habitat destruction/conservation, use of non-renewable resources, waste recycling, waste to landfill, toxic waste, etc.					
(xvi) Noise not sound Company reporting and sire reporting should cover waste/resource management and risks from hazards as well as ecological issues, including biodiversity sometimes.					

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 5-point scale where 1 = Strongly Disagree, 3 = Neutral, and 5 = Strongly Agree. P: 1, 2 represents the percentage rating for the combined frequency of response for 1 (Strongly Disagree) and 2. P: 4, 5 represents the percentage rating for the combined frequency of response for 4 and 5 (Strongly Agree).

## **(v) Verification of Corporate Environmental Disclosure**

This part of the survey considers the attitudes of the normative group towards whether or not voluntary corporate environmental disclosure should be verified, and if it should, who, according to the respondents, are the most appropriate agents for verification (see section 3.4 (ix)). The respondents were asked to indicate their attitudes towards six possible groups of verifiers and, whether or not they perceive verification as necessary. They were asked for their extent of agreement with the seven propositions by selecting a score from 1 (Strongly Disagree) to 5 (Strongly Agree). The descriptive statistics (table 6.17) revealed that environmental consultants within their existing framework (proposition (1); mean = 3.65) received strong support as verifiers of environmental disclosure, supporting the European Union's Eco-Management and Audit Scheme. The notion that verification is not necessary (proposition (7); mean = 1.59) received the lowest mean average score, indicating strong disagreement. Furthermore, of the respondents, 86.3% report a score of 1 or 2, whereas only 6.3% reported a score of 4 or 5, supporting the academic accounting literature. Another group which received very low mean average scores as verifiers of environmental information were the accountants within their existing framework (proposition (6); mean = 2.54). Wilcoxon tests (appendix D, table 14) revealed that environmental consultants within their existing framework are regarded significantly more important as verifiers of environmental information than most of the others. There were significantly lower scores attributed to verification not being necessary.

The findings would seem to confirm Adams' (1992) and Perks' (1993) views that verification is required by users for the purpose of credibility. The most interesting

**Table 6.17: Descriptive Statistics  
Verification of Corporate Environmental Disclosure**

	N	Mean	S.D.	P: 1, 2	P: 4, 5
1. Environmental consultants within their existing framework.	85	3.65	1.06	12.9	61.2
2. A registered auditor of The Environmental Auditors' registration Association.	82	3.22	1.14	19.5	34.2
3. Scientists within their existing framework.	83	3.11	1.32	30.1	44.5
4. Internal management team.	82	3.09	1.28	39.0	39.0
5. A new professional body that includes accountants, scientists and environmental consultants.	81	2.88	1.22	37.0	25.9
6. Accountants within their existing framework.	81	2.54	1.31	46.9	29.6
7. Verification is not necessary.	80	1.59	1.00	86.3	6.3
8. Others:					
(i) Depends on type of report. Professional institutes such as IEEM could play a role.					
(ii) Environmental consultants are scientists (or should be)					
(iii) Verification should be both internal then external with continuous feedback.					
(iv) Accredited environmental verifiers w.r.t. EMAS.					
(v) If the information is an environmental management system then obviously this is defined for verification by a certification body.					

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 5-point scale where 1 = Strongly Disagree, 3 = Neutral, and 5 = Strongly Agree. P: 1, 2 represents the percentage rating for the combined frequency of response for 1 (Strongly Disagree) and 2. P: 4, 5 represents the percentage rating for the combined frequency of response for 4 and 5 (Strongly Agree).

aspect for accountants is that the respondents do not perceive them as having the credibility to verify (see Power, 1991 and Perks, 1993). However, the accountants do wield "the bigger stick" (Berger and Luckmann, 1991), and the notion of one firm verifying all public disclosure is enticing from a strategic and financial perspective for companies. There is some concern that a small proportion of respondents are of the opinion that verification is not necessary, which would seem to support the United Nations (UNEP, 1994) view that verification does not guarantee credibility.



## **(vi) Suggested Motives For Corporate Environmental Disclosure**

This part of the enquiry ascertains attitudes of the normative group towards several suggested motives for corporate environmental reporting (see section 3.4(i)). The respondents were asked to report a score from 1 (Strongly Disagree) to 5 (Strongly Agree) to indicate the extent of their agreement with the proposed motives for environmental disclosure. The descriptive statistics (see table 6.18) showed that there are four motives receiving strong agreement from the respondents. These were: to improve the company's corporate image (proposition (1); mean = 4.35); to market the company (proposition (2); mean = 4.11); to market company products (proposition (3); mean = 3.91) and; peer pressure from companies in the same industry (proposition (4); mean = 3.86). Of the respondents, well over 70% reported a score of 4 or 5, whereas less than 4% reported a score of 1 or 2, for all of these four motives. This finding would seem to support market oriented disclosure, as suggested by Mathews (1987) and Gray *et al.* (1995), as discussed in section 3.4(i). The motive which received the lowest mean average score was "meeting the demand for environmental information" (proposition (12); mean = 3.32). The motive of improving the company's corporate image was preferred to all other motives (see Wilcoxon tests, appendix D, table 15) whereas the motive of meeting the demand for environmental information gained considerably lower scores from the respondents. This would suggest that the normative group's attitudes to the motives for corporate environmental disclosure are primarily market-oriented and not accountability-oriented.

To assess whether or not the respondents demonstrated varying preferences for these propositions, a factor analysis was used to identify groups of propositions representing

**Table 6.18: Descriptive Statistics  
Suggested Motives For Corporate Environmental Disclosure**

	N	Mean	S.D.	P: 1, 2	P: 4, 5
1. To improve the company's corporate image.	88	4.35	0.64	0.0	90.9
2. To market the company.	89	4.11	0.71	2.2	84.3
3. To market company products.	89	3.91	0.86	3.4	75.3
4. Peer pressure from companies in the same industry.	88	3.86	0.68	2.3	73.9
5. To comply with regulations.	88	3.86	1.09	12.5	69.4
6. Pressure from customers / consumers.	87	3.79	1.07	17.2	68.9
7. To attract investment.	89	3.64	1.05	15.7	62.9
8. As an acceptance of a change in society's ethics.	87	3.59	0.92	12.6	64.3
9. To acknowledge social responsibility.	89	3.54	0.98	16.9	59.6
10. As a result of company ethics.	88	3.42	1.03	15.9	47.8
11. As a form of political lobbying.	88	3.38	1.02	21.6	47.7
12. To meet the demand for environmental information.	87	3.32	1.03	20.7	46.0
13. Others:					
(i) Demand can only be met in a commercial sense if it can be done profitably.					

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 5-point scale where 1 = Strongly Disagree, 3 = Neutral, and 5 = Strongly Agree. P: 1, 2 represents the percentage rating for the combined frequency of response for 1 (Strongly Disagree) and 2. P: 4, 5 represents the percentage rating for the combined frequency of response for 4 and 5 (Strongly Agree).

relationships. The analysis constructed a small number of factors which convey a large proportion of the information present in the total number of variables. The results (see table 6.19) show that the motives load onto three factors, which account for 75.9% of the variation in the data. An analysis of the factor loadings reveals that they seem to represent the following:

- (i) ethical motives (propositions (8), (9), (10) and (12));
- (ii) courtier motives (propositions (7) and (11));
- (iii) public relations motives (propositions (1), (2) and (3));
- (iv) regulation motive (proposition (5)), and;
- (v) psychological, or pressure, motives (propositions (4) and (6)).

**Table 6.19: Factor Matrix: Varimax Orthogonal Rotation  
Suggested Motives For Corporate Environmental Disclosure**

	Factor				
	1	2	3	4	5
1. To improve the company's corporate image.			0.8377		
2. To market the company.			0.6764		
3. To market company products.			0.5899		
4. Peer pressure from companies in the same industry.					0.5877
5. To comply with regulations.				0.8796	
6. Pressure from customers / consumers.					0.8940
7. To attract investment.		0.7438			
8. As an acceptance of a change in society's ethics.	0.7973				
9. To acknowledge social responsibility.	0.8073				
10. As a result of company ethics.	0.8576				
11. As a form of political lobbying.		0.7515			
12. To meet the demand for environmental information.	0.5547				
Cumulative Percentage of Variance Explained	24.0	45.5	56.9	67.4	75.9

Only the largest factor loadings are shown for each variable.

To summarise, the findings suggest that the attitude of the normative group is that companies disclose for public relations purposes (see Cwen, 1992). The factor analysis (factor (iii)) reveals that this is a major motivation for corporations. The main accountability motive, "to meet the demand for environmental information", is perceived as significantly less important by this group, with a score in the region of neutral.

#### **(vii) Possible Reasons For the Inadequacy of Corporate Environmental Disclosure**

This part of the enquiry considers why companies disclose so little environmental disclosure (see section 3.4 (xii)). The respondents were asked to indicate the extent of

their agreement with each motive by selecting a score from 1 (Strongly Disagree) to 5 (Strongly Agree). The descriptive statistics (table 6.20) indicated five motives which attracted high scores from the respondents. These are: reluctance to report sensitive information (proposition (1); mean = 4.18); general lack of awareness of environmental issues (proposition (2); mean = 4.06); possible damage to company's reputation (proposition (4); mean = 3.92); to avoid providing information to competitors (proposition (5); mean = 3.82) and; to avoid providing incriminating information to regulators (proposition (7); mean = 3.78). Of the respondents, over 60% reported a score of 4 or 5 for all these five motives, whereas less than 10% indicated a score of 1 or 2. The motive receiving the lowest mean average score was that users may not understand the information (proposition (12); mean = 2.98). Reluctance to report sensitive information attracted significantly more attention from the respondents than most of the other motives (see appendix D, table 16), whereas users not understanding the information, and the notion that companies generally believe they do not have an impact on the environment, were shown to be significantly less important than the majority of alternatives.

To assess whether or not the respondents demonstrate varying preferences for these propositions, a factor analysis was used to identify groups of propositions representing relationships. The analysis will construct a small number of factors which convey a large proportion of the information present in the total number of variables. The results (see table 6.21) show that the motives load onto five factors, which account for 74.3% of the variation in the data. An analysis of the factor loadings reveals that they seem to represent the following:

**Table 6.20: Descriptive Statistics  
Possible Reasons For the Inadequacy of Corporate Environmental Disclosure**

	N	Mean	S.D.	P: 1, 2	P: 4, 5
1. Reluctance to report sensitive information.	87	4.18	0.77	2.3	82.7
2. General lack of awareness of environmental issues.	86	4.06	0.93	5.8	75.6
3. There is no legal obligation for companies to report environmentally.	87	4.01	1.21	10.3	73.6
4. Possible damage to companies' reputation.	86	3.92	0.88	4.7	73.3
5. To avoid providing information to competitors.	87	3.82	0.98	8.0	64.4
6. Cost of disclosure.	87	3.79	1.04	10.3	65.5
7. To avoid providing incriminating information to regulators.	87	3.78	1.06	9.2	63.2
8. Inability to gather the information.	86	3.77	1.07	12.8	72.1
9. Lack of awareness of competitive advantage.	84	3.52	0.96	10.7	51.2
10. Insufficient response / feedback from stakeholders.	86	3.30	1.13	23.3	45.3
11. Companies generally believe they do not have an impact on the environment.	87	2.79	1.28	49.4	29.9
12. Users may not understand the information.	86	2.98	1.25	36.0	37.2
13. Others:					
(i) Corporate inertia.					
(ii) Benefit to environmental reporting in pound terms.					
(iii) Because the financial investment community do not press them enough!					

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 5-point scale where 1 = Strongly Disagree, 3 = Neutral, and 5 = Strongly Agree. P: 1, 2 represents the percentage rating for the combined frequency of response for 1 (Strongly Disagree) and 2. P: 4, 5 represents the percentage rating for the combined frequency of response for 4 and 5 (Strongly Agree).

- (i) incrimination (propositions (1), (4), (5) and (7));
- (ii) no reason to report (propositions (3), (9), and (10));
- (iii) misunderstanding of benefits to company and society (propositions (6), (8) and (11));
- (iv) lack of awareness of environmental issues (proposition (2)), and;
- (v) users may not understand the information (proposition (12)).

**Table 6.21: Factor Matrix: Varimax Orthogonal Rotation  
Possible Reasons for the Inadequacy of Corporate Environmental Disclosure**

	Factor				
	1	2	3	4	5
1. Reluctance to report sensitive information.	0.7825				
2. General lack of awareness of environmental issues				0.9219	
3. There is no legal obligation for companies to report environmentally.		0.7690			
4. Possible damage to companies' reputation.	0.8074				
5. To avoid providing information to competitors.	0.7406				
6. Cost of disclosure.			0.7678		
7. To avoid providing incriminating information to regulators.	0.8288				
8. Inability to gather the information.			0.6872		
9. Lack of awareness of competitive advantage.		0.7626			
10. Insufficient response / feedback from stakeholders.		0.7458			
11. Companies generally believe they do not have an impact on the environment.			0.6407		
12. Users may not understand the information.					0.9351
Cumulative Percentage of Variance Explained	26.2	44.1	56.0	65.9	74.3

Only the largest factor loadings are shown for each variable.

The five factors in the factor analysis represent a consolidation of the views of the normative group. Factor (i) would seem to support Ball and Bell (1995), factor (ii), supports Benston (1982a) with an emphasis on a markets' perspective for disclosure. Factor (iii) is very similar to the "legitimate" reasons forwarded by the World Industry Council for the Environment (WICE, 1994) for excluding certain information from the public domain. Factor (iv) is indicative of the approach taken by Gray *et al.* (1987a, 1993, and 1996a), of attempts to educate accountants about environmental issues. Lastly, factor (v) provides some support for Gray's (1992) argument for transparency in environmental reporting.

To summarise, the findings indicate that the normative group's views towards the inadequacy of corporate environmental disclosure centre on corporate secrecy (incrimination, factor (i)) and the fact the companies have no reason to report (factor (ii)). Of lesser importance is that users may not understand the information. The literature discusses all these reasons, and the results provide a useful ranking. From a policy point of view, the attitudes of the normative group would suggest that mandatory disclosure will do little to educate managers or convince them to be less secretive. If the normative groups' attitudes do represent reality, then mandatory disclosure will be likely to follow the route of financial reporting with substance being subservient to form, suggesting that a dual approach of legislation and education of corporate management would be the most sensible way of producing useful, environmental disclosure.

#### **(viii) Interested Party Access to Corporate Environmental Disclosure**

This part of the enquiry addresses the issue of where the normative group believe the most appropriate place is for interested parties to access environmental information (see section 3.4(x)). The respondents were asked to indicate their views by selecting a score from 1 (Strongly Disagree) to 5 (Strongly Agree). The descriptive statistics (table 6.22) show that the place of access to interested parties in the opinion of the normative group, receiving the highest mean average score, was company head office (proposition (1); mean = 4.02). Of the respondents, 64.7% indicated a score of 4 or 5 as opposed to only 7.1% who reported a score of 1 or 2. The place of access receiving the lowest mean average score was site/branch level access (proposition (4); mean = 1.99). Of the respondents, 62.2% voted 1 or 2, whereas only 3.7% reported a score of 4 or 5. Preferences among the propositions were revealed in the Wilcoxon statistics (appendix

**Table 6.22: Descriptive Statistics  
Interested Party Access to Corporate Environmental Disclosure**

	N	Mean	S.D.	P: 1, 2	P: 4, 5
1. From company head office.	85	4.02	1.08	7.1	64.7
2. From company head office and at site / branch level.	83	3.92	1.23	13.3	68.7
3. From a central reference place where all company environmental disclosure can be examined.	84	3.55	1.36	20.2	55.9
4. Only at site / branch level.	82	1.99	0.96	62.2	3.7
5. Others:					
(i) Town Libraries. Comment made 3 times.					
(ii) Via local authority / statutory agency.					
(iii) Entirely dependent on circumstances.					
(iv) Public access points such as, community group centres.					
(v) Computer databases.					
(vi) Internet.					

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 5-point scale where 1 = Strongly Disagree, 3 = Neutral, and 5 = Strongly Agree. P: 1, 2 represents the percentage rating for the combined frequency of response for 1 (Strongly Disagree) and 2. P: 4, 5 represents the percentage rating for the combined frequency of response for 4 and 5 (Strongly Agree).

D, table 17), with the proposition "only at site/branch level" being perceived as significantly less appropriate than the other choices. To summarise, the normative respondents' attitudes are that company head office, as well as other company outlets, should hold environmental information for interested parties. This corresponds with present practice.

### **(ix) Accountability, Decision-Making and Corporate Environmental Disclosure**

This part of the enquiry investigates possible commonalities between financial and environmental disclosure, on a very general basis (see section 3.4(xi)). The respondents



**Table 6.23 Descriptive Statistics  
Accountability, Decision-Making and Corporate Environmental Disclosure**

	N	Mean	S.D.	P: 1, 2	P: 4, 5
1. Environmental disclosure that has been analysed would be more useful for accountability and decision-making purposes than raw data.	87	3.94	0.93	5.7	72.4
2. Interested parties require company environmental disclosure for accountability and decision-making purposes.	86	3.69	0.87	4.7	54.7
3. It would be useful for accountability and decision-making purposes if companies disclosed environmental target-setting information with respect to a set classification.	86	3.43	0.91	12.8	46.5
4. Company environmental disclosure should be regulated in the same way as accounting disclosure.	86	3.43	1.32	26.7	53.4

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 5-point scale where 1 = Strongly Disagree, 3 = Neutral, and 5 = Strongly Agree. P: 1, 2 represents the percentage rating for the combined frequency of response for 1 (Strongly Disagree) and 2. P: 4, 5 represents the percentage rating for the combined frequency of response for 4 and 5 (Strongly Agree).

were asked to report a score between 1 (Strongly Disagree) and 5 (Strongly Agree) for the statements presented to them. The descriptive statistics (table 6.23) showed that environmental disclosure that has been analysed would be more useful for accountability and decision-making purposes than raw data (proposition (1); mean = 3.94) and that interested parties require company environmental disclosure for accountability and decision making purposes (proposition (2); mean = 3.69) received the highest mean average scores. The proposition receiving the lowest mean average score was that company environmental disclosure should be regulated in the same way as accounting disclosure (proposition (4); mean = 3.43). In part, this result may be due to the "expectations gap" (see Perks, 1993, and; EAAR, March, 1996b). Preferences may be found in appendix D, table 18.

To summarise, the results indicate that accountability and decision-usefulness can be incorporated, as objectives in corporate environmental disclosure. Interestingly, some type of summary of non-technical disclosure is probably more useful. This also highlights the importance of verified qualitative disclosure. However, set classifications and a regulatory framework, akin to financial reporting, are relatively less useful.

#### **6.2.4 Further Points**

At the end of the questionnaire, the respondents were asked to add any further comments (see table 6.24). Comments (ix) and (x) support the conceptual framework approach. Comment (vii) would welcome more emphasis on comparison to previous periods incorporated in the framework. Comments (xi) and (xiii) indicate the potential problem with consolidation and the likelihood of creative environmental disclosure in this area. Comments (iv), (v) and (xii) suggest that there are potential problems with a conceptual framework approach if differences between industries and companies are not taken adequately into account. Therefore, the framework needs to be not only dynamic, but flexible. Comment (vi) suggests that the conceptual framework under investigation may become bureaucratic and, in agreement with comment (ii), sees an element of professional parasitism in environmental reporting. Comments (v) and (viii) indicate that the respondents are concerned that there may not be enough emphasis on stakeholder consultation. Lastly, comment (v) highlights one of the limitations of using the mail questionnaire methodology. Interestingly, all these points are covered in the literature. The respondents have indicated what they consider to be the most important issues in the questionnaire.

**Table 6.24: Further Points**

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<b>Comments</b>	
(i)	As we are an organisation and not a company a lot of questions were difficult in respect of an accurate response. With many, it depends on the "greenness" of a company.
(ii)	Given the cock-ups we have had with existing accounting standards, one shudders with horror at the thought of that bunch pushing companies around and charging them for an environmental audit.
(iii)	My members grow Christmas Trees. It is important that people understand the benefits real Christmas Trees are to the environment.
(iv)	How would appropriate standards be observed so that all companies report from the same baseline?
(v)	The requirements of different interested parties vary - as do company circumstances - so it is not very meaningful to answer questions as generalised as those in this questionnaire.
(vi)	The urgent task is to reduce not increase bureaucracy and parasitism.
(vii)	Not enough emphasis on monitoring and comparison to previous period. There are basic obstacles to moving forward such as lack of awareness.
(viii)	Environmental information may be packaged and used in many different ways. The intended use will determine the most suitable form of the information. Different uses will require different forms of reporting. You need to be more specific about internal uses. Perhaps you should have posted this questionnaire to some environmental scientists / environmental managers in industry.
(ix)	As your questionnaire indicates there is a need to measure and present performance over both quantitative and qualitative issues. The latter can be measured with the use of assessment questionnaires. This can be constructed with quantifiable issues to produce an overall summary of performance which needs to be graphically reported. Also need for companies to consult external shareholders to identify what they want to see reported on and the format in which this is reported.
(x)	There needs to be a standardised format of disclosure. Environmental audit can mean many different things to different individuals / companies.
(xi)	Collection of information at site level and consolidation/aggregation at corporate level can lead to: a) Quality problems; b) "Spreading" of environmental burdens (which can be acute at one site locally) over many sites. Reported data should have an accuracy estimate. Verification by auditors should always specify the extent of the verification.
(xii)	Disclosure of information is complex, and should not be oversimplified. Reasonable, objective and fair reporting is a useful way for an organisation to take a proactive position. However, differing companies need differing types of reporting to accurately reflect their position. Environmental effects or impact are relative, and where matter are over quantitative or financially biased may result in misinterpretation. As far as possible comparing like with like is important to ensure that we do not overburden smaller or less potentially environmental damaging organisations with reporting needs.
(xiii)	Holistic approach of the business and impact of other business practices "product chains".

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### **6.3 Conclusion**

The responses from the normative group have provided the first stage of the consensus required to develop a conceptual framework for corporate environmental reporting. The most important finding is that the respondents consider that the interested parties would find a "compliance with standards report" most useful. This would seem to be a consistent theme throughout this chapter, as wherever a proposition has been put forward, suggesting legislation, it is supported with significant statistical results. Furthermore, there is evidence to support disclosure on a financial, quantitative and qualitative basis. Finally, there is support for a comprehensive framework for environmental and financial reporting, sharing common characteristics.

## Chapter Seven

### The Attitudes of the Interested Party Group towards a Conceptual Framework for Corporate Environmental Reporting

*"A true and fair view, is this accountant speak for a complete tissue of lies?"*  
Interested party respondent.

#### 7.1 Introduction

This chapter reports and analyses the attitudes of the interested party sample group towards a conceptual framework for corporate environmental reporting. Four prominent references are used in interpreting the responses, discussed in section 3.3.3, namely: the Ceres Report of Body Shop (Body Shop International, 1995); "Consulting the Stakeholder: A Profile of IBM UK's Environmental Performance" (IBM, 1995); "Engaging Stakeholders: 2. The Case Studies" (UNEP, 1996b), and; "Environmental Reports and Disclosures: The Financial Analyst's View" (EFFAS, 1994). Each reference indicates requirements of a sample group of interested parties. Further, each adopts a unique approach to developing a systematic way for companies to disclose environmental information.

The analysis, presentation, and structure of the questions in this chapter are consistent with those in chapter six. Section 7.2 presents and analyses the attitude responses of the interested party group at three levels: the usefulness of corporate environmental information; attitudes towards corporate environmental reports and reporting, and; views concerning the present framework for corporate environmental disclosure. The chapter concludes in section 7.3.

## **7.2 The Empirical Findings**

### **7.2.1 Attitudes Towards Corporate Environmental Information, in Relation to Financial, Quantitative and Qualitative Disclosure**

The following section discusses the attitudes of the interested parties towards the disclosure of useful corporate environmental information.

#### **(i) The Usefulness of Corporate Environmental Information**

In relation to the usefulness of corporate environmental information (see section 3.4(ii)), the descriptive statistics (table 7.1, part A) on a financial basis showed that the proposition receiving the highest mean average score was environmental policy statement (proposition (1); mean = 2.34). This was closely followed by environmental strategy statement (proposition (2); mean 2.33). The propositions with the lowest mean average scores were product packaging (proposition (14); mean = 1.96) and product life cycle design (proposition (15); mean = 1.96). Wilcoxon tests (see appendix E, table 1, part A) showed that environmental policy statement is considered significantly more useful than most of the other propositions. The results also emphasised the relative lack of importance of product packaging.

On a quantitative basis, the descriptive statistics (table 7.1, part B) revealed that the interested party group consider the most useful disclosure to be environmental policy statement (proposition (1); mean = 2.44) and environmental strategy statement. (proposition (2); mean = 2.43). This reflects the results for disclosure on a financial basis. The respondents placed management responsibilities for the environment

**Table 7.1: Descriptive Statistics  
The Usefulness of Corporate Environmental Information**

	N	Mean	S.D.	P: 1	P: 3
<b>Part A: Financial Disclosure</b>					
1. Environmental policy statement.	80	2.34	0.69	12.5	46.3
2. Environmental strategy statement.	80	2.33	0.74	16.3	48.8
3. Environmental audit.	82	2.28	0.69	13.4	41.5
4. Legal environmental compliance.	79	2.28	0.75	17.7	45.6
5. Research & Development and the environment.	81	2.19	0.71	17.3	35.8
6. Independently verified environmental disclosure.	80	2.18	0.78	22.5	40.0
7. Company environmental initiatives.	80	2.15	0.66	15.0	30.0
8. Environmental management system.	77	2.14	0.74	20.8	35.1
9. Environmental statement by company chairman.	81	2.12	0.73	21.0	33.3
10. Management responsibilities for the environment.	78	2.12	0.76	23.1	34.6
11. Context of company environmental disclosure.	76	2.08	0.71	21.1	28.9
12. Product impacts.	78	2.08	0.73	23.1	30.8
13. Environmental reporting policy.	79	2.05	0.70	21.5	26.6
14. Product packaging.	80	1.96	0.72	27.5	23.8
15. Product life cycle design.	77	1.96	0.72	27.3	23.4
<b>Part B: Quantitative Disclosure</b>					
1. Environmental policy statement.	81	2.44	0.69	11.1	55.6
2. Environmental strategy statement.	83	2.43	0.68	10.8	54.2
3. Environmental audit.	86	2.40	0.67	10.5	50.0
4. Product impacts.	80	2.36	0.73	15.0	51.3
5. Company environmental initiatives.	82	2.35	0.67	11.0	46.3
6. Environmental reporting policy.	81	2.35	0.69	12.3	46.9
7. Independently verified environmental disclosure.	83	2.35	0.74	15.7	50.6
8. Legal environmental compliance.	82	2.35	0.74	15.9	51.2
9. Product life cycle design.	83	2.34	0.74	15.7	49.4
10. Research & Development and the environment.	82	2.33	0.67	11.0	43.9
11. Environmental management system.	81	2.30	0.73	16.0	45.7
12. Context of company environmental disclosure.	78	2.24	0.72	16.7	41.0
13. Environmental statement by company chairman.	79	2.20	0.79	22.8	43.0
14. Management responsibilities for the environment.	80	2.18	0.76	21.3	38.8
15. Product packaging.	81	2.11	0.74	22.2	33.3

**Table 7.1 continued**

	N	Mean	S.D.	P: 1	P: 3
<b>Part C: Qualitative Disclosure</b>					
1. Environmental policy statement.	83	2.52	0.69	10.8	62.7
2. Environmental audit.	82	2.44	0.69	11.0	54.9
3. Legal environmental compliance.	81	2.43	0.72	13.6	56.8
4. Independently verified environmental disclosure.	82	2.43	0.74	14.6	57.3
5. Management responsibilities for the environment.	82	2.42	0.75	15.9	57.3
6. Environmental strategy statement.	79	2.38	0.74	15.2	53.2
7. Company environmental initiatives.	83	2.37	0.68	10.8	48.2
8. Environmental reporting policy.	81	2.37	0.72	13.6	50.6
9. Product impacts.	77	2.36	0.74	15.6	51.9
10. Context of company environmental disclosure.	78	2.30	0.76	17.9	47.4
11. Environmental management system.	79	2.29	0.75	17.7	46.8
12. Product life cycle design.	81	2.25	0.78	21.0	45.7
13. Research & Development and the environment.	79	2.27	0.66	11.4	38.0
14. Environmental statement by company chairman.	81	2.17	0.80	24.7	42.0
15. Product packaging.	78	2.10	0.75	23.1	33.3
16. None of the above = 3					
					Non-response = 1
17. Others:					
(i) Whilst the concept of independent environmental verification is attractive, I am conscious of the fact that many small or medium enterprises, would find the cost of such an exercise prohibitive					
(ii) Environmental breaches currently outstanding					
(iii) Financial estimates of achieving a sustainable eco-balance at some point in the future. Then yearly disclosure of expenditure incurred in achieving targets.					
(iv) Environmental purchasing policy					
(v) Training for staff.					
(vi) Sustainability, life cycle analysis and eco-balance.					

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 3-point scale where 1 = Never, 2 = Sometimes, and 3 = Always. P: 1 represents the percentage rating for the frequency of response for 1 (Never). P: 3 represents the percentage rating for the frequency of response for 3 (Always).



(proposition (14); mean = 2.18) and product packaging (proposition (15); mean = 2.11) as being of least use to them. Wilcoxon tests placed environmental policy statement as significantly more useful than several other propositions (see appendix E, table 1, part B). Again, product packaging was shown to be relatively less useful.

On a qualitative basis, the descriptive statistics (table 7.1, part C) revealed that the respondents consider the most useful disclosure to be environmental policy statement (proposition (1); mean = 2.52). Of the respondents, 62.7% reported a score of 3 (Always) whereas only 10.8% recorded a score of 1 (Never). Environmental audit (proposition (2); mean = 2.44) is also judged important by the interested party group. The proposition receiving the least support from the respondents was product packaging (proposition (15); mean = 2.10). These results are consistent with the other two types of disclosure discussed above. Statistical comparison of the information items (appendix E, table 1, part C) again revealed the relative usefulness of environmental policy statement, whereas product packaging was confirmed as being relatively less useful.

Inter-disclosure comparisons (see Wilcoxon results in appendix E, table 1, part D) showed that disclosure on a quantitative or qualitative basis is preferred, by the respondents, to financial disclosure for the majority of propositions. This is consistent with the results in section 6.2.1(i) for the normative respondent group.

To summarise, environmental policy statement and environmental audit, appear to be of most use to interested parties, as these consistently received high scores for all three types of disclosure. Environmental strategy and policy are featured in IBM's environmental performance indicators. Product packaging consistently received relatively

lower scores (IBM, for example, does not emphasise this item). It is notable that environmental policy statement, particularly on a qualitative basis, was also preferred by the normative group. Overall, disclosure was preferred by the interested party group in either the quantitative or qualitative form rather than financial, again a consistent result with the normative group's responses. However, this does not necessarily indicate that financial disclosure is not useful, but that it is only of lesser interest. Evidence was available to support the United Nations (UNEP, 1996b) and Ceres (CERES, 1992) view that quantitative disclosure is the preferred type.

## **(ii) Corporate Environmental Resource Information**

In relation to the interested parties' attitudes towards environmental resources (see section 3.4(ii)), on a financial basis, the descriptive statistics (see table 7.2, part A) indicated that raw material used (proposition (1); mean = 2.05) is considered of most use to the interested party group. Energy consumption (proposition (2); mean = 2.01) was closely followed by water consumption (proposition (3); mean = 1.89). The Wilcoxon statistics indicated no rejection of the null hypothesis that respondents could discriminate between the propositions.

On a quantitative basis, the descriptive statistics (see table 7.2, part B) showed that the proposition receiving the highest mean average score from the respondents, was raw materials used (proposition (1); mean = 2.31). This was closely followed by energy consumption (proposition (2); mean = 2.27). Water consumption (proposition (3); mean = 2.14) received the lowest mean average score from the interested party group. Again, there were no significant statistics for comparison of the propositions on this basis.

**Table: 7.2: Descriptive Statistics  
Corporate Environmental Resource Information**

	N	Mean	S.D.	P: 1	P: 3
<b>Part A: Financial Disclosure</b>					
1. Raw materials used.	80	2.05	0.79	28.8	33.8
2. Energy consumption.	81	2.01	0.80	30.9	32.1
3. Water consumption.	81	1.89	0.81	38.3	27.2
<b>Part B: Quantitative Disclosure</b>					
1. Raw materials used.	83	2.31	0.83	22.9	54.2
2. Energy consumption.	86	2.27	0.85	25.6	52.3
3. Water consumption.	85	2.14	0.83	28.2	42.4
<b>Part C: Qualitative Disclosure</b>					
1. Raw materials used.	82	2.26	0.84	25.6	51.2
2. Energy consumption.	84	2.24	0.86	27.4	51.2
3. Water consumption.	83	2.12	0.85	30.1	42.2
4. None of the above = 16	Non-response = 2				
5. Others:					
(i) Energy saved, fuel policy.					
(ii) Use annual reports.					
(iii) Emissions.					
(iv) Transport, manpower.					
(v) Full life cycle analysis and impacts.					

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 3-point scale where 1 = Never, 2 = Sometimes, and 3 = Always. P: 1 represents the percentage rating for the frequency of response for 1 (Never). P: 3 represents the percentage rating for the frequency of response for 3 (Always).

The descriptive statistics (table 7.2, part C) for disclosure on a qualitative basis, showed that raw material used (proposition (1); mean = 2.26) is considered of most use by the respondents, with energy consumption (proposition (2); mean = 2.24) a close second. Finally, water consumption (proposition (3); mean = 2.12) is seen as the least useful by the interested party group. The Wilcoxon tests again revealed no rejection of the null hypothesis.

Inter-disclosure comparisons (see appendix E, table 2) showed that quantitative disclosure is considered more useful than financial disclosure in all cases. Qualitative disclosure was also shown to be of greater use than financial disclosure for water consumption.

Overall the descriptive results for the three types of disclosure displayed a consensus. However, no strong preferences were illustrated by the Wilcoxon tests, except in tests comparing the disclosure types. These suggested that the interested party respondents preferred quantitative over financial disclosure, confirming the United Nation's and Ceres' views. This finding is consistent with the normative group's response, who also preferred quantitative disclosure to financial (or qualitative). The stakeholder requirements of IBM for input disclosure are consistent with these results as they require disclosure on energy inputs and inputs to manufacturers. The approach which seems to be misspecified is the European Federation of Financial Analysts' (EFFAS, 1994) as energy disclosure is only required in relation to its polluting effects, as is water, which is only disclosed in terms of discharges to it. There is no requirement for the disclosure of raw materials or inputs into the commercial process. Overall, the findings indicate

that interested parties would welcome disclosure of resource information on a quantitative basis.

### **(iii) Corporate Environmental Risk Information**

In relation to the usefulness of corporate environmental risk information (see section 3.4(ii)), on a financial basis, the table of descriptive statistics (see table 7.3, part A) revealed that environmental information that may cause financial failure (proposition (1); mean = 2.43), as well as the risk of site contamination (proposition (2); mean = 2.34), and financial information that could impose actual liability on a company's lender (proposition (3); mean = 2.34), are all considered useful items of information. Further, the risk of environmental influences on companies' markets (proposition (7); mean = 2.26) and the risk of non-compliance with legislation (proposition (6); mean = 2.26) are seen as relatively unimportant sources of information for this respondent group. Comparative tests (appendix E, table 3, part A) showed that respondents could not generally rank the risk items. The only significant statistic indicated that the risk of environmental influences on companies' markets is perceived as less useful than environmental information that may cause financial failure.

For information reported on a quantitative basis, the descriptive statistics (table 7.3, part B) revealed that the risk of site contamination (proposition (1); mean = 2.44) received the highest mean average score from the respondents. Also, environmental information that may cause financial failure (proposition (2); mean = 2.35) is seen as useful. At the other end of the scale, the risk of environmental influences on companies' markets (proposition (7); mean = 2.24) is seen as unimportant by the respondents, as is financial

**Table 7.3: Descriptive Statistics  
Corporate Environmental Risk Information**

	<b>N</b>	<b>Mean</b>	<b>S.D.</b>	<b>P: 1</b>	<b>P: 3</b>
<b>Part A: Financial Disclosure</b>					
1. Environmental information that may cause financial failure.	84	2.43	0.73	14.3	57.1
2. The risk of site contamination.	82	2.34	0.76	17.1	51.2
3. Financial information that could impose actual liability on a company's lender.	83	2.34	0.79	19.3	53.0
4. Environmental information that may reduce financial performance.	84	2.30	0.77	19.0	48.8
5. Environmental factors that could reduce the value of a company's assets.	83	2.29	0.80	21.7	50.6
6. The risk of non-compliance with legislation.	82	2.26	0.77	19.5	45.1
7. The risk of environmental influences on companies' markets.	82	2.26	0.73	17.1	42.7
<b>Part B: Quantitative Disclosure</b>					
1. The risk of site contamination.	84	2.44	0.68	10.7	54.8
2. Environmental information that may cause financial failure.	84	2.35	0.72	14.3	48.8
3. Environmental factors that could reduce the value of a company's assets.	82	2.29	0.75	17.1	46.3
4. The risk of non-compliance with legislation.	82	2.28	0.71	14.6	42.7
5. Environmental information that may reduce financial performance.	85	2.28	0.73	16.5	44.7
6. Financial information that could impose actual liability on a company's lender.	82	2.26	0.73	17.1	42.7
7. The risk of environmental influences on companies' markets.	82	2.24	0.73	17.1	41.5

**Table 7.3 continued**

	N	Mean	S.D.	P: 1	P: 3
<b>Part C: Qualitative Disclosure</b>					
1. The risk of site contamination.	80	2.43	0.71	12.5	55.0
2. Environmental information that may cause financial failure.	81	2.31	0.72	14.8	45.7
3. The risk of non-compliance with legislation.	79	2.27	0.73	16.5	43.0
4. Environmental factors that could reduce the value of a company's assets.	79	2.25	0.74	17.7	43.0
5. Environmental information that may reduce financial performance.	82	2.23	0.74	18.3	41.5
6. The risk of environmental influences on companies' markets.	79	2.22	0.73	17.7	39.2
7. Financial information that could impose actual liability on a company's lender.	79	2.20	0.72	17.7	38.0
8. None of the above = 5					
Non-response = 0					

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 3-point scale where 1 = Never, 2 = Sometimes, and 3 = Always. P: 1 represents the percentage rating for the frequency of response for 1 (Never). P: 3 represents the percentage rating for the frequency of response for 3 (Always).

information that could impose actual liability on a company's lender (proposition (6); mean = 2.26). The null hypothesis of the Wilcoxon test was accepted in all pairwise cases.

On a qualitative basis, the descriptive statistics (table 7.3, part C) showed that the risk of site contamination (proposition (1); mean = 2.23) is considered an extremely useful source of information for the interested party respondents. Environmental information that may cause financial failure (proposition (2); mean = 2.31) is also considered important. Of lesser importance were financial information that could impose actual liability on a company's lender (proposition (7); mean = 2.20) and the risk of

environmental influences on companies' markets (proposition (6); mean = 2.22). Again, the Wilcoxon results (see appendix E, table 3, part B) demonstrated little evidence of respondents' preferences, and the only significant finding was that the risk of environmental influences on companies' markets is perceived as less useful, in this case, than the risk of site contamination.

Inter-disclosure comparisons (see appendix E, table 3, part C) revealed that in one case (environmental information that may cause financial failure) financial disclosure is considered significantly more useful than quantitative or qualitative disclosure.

Overall, environmental information which may cause financial failure, and the risk of site contamination, are perceived as the most useful forms of corporate risk disclosure, for all three types of disclosure, by the interested parties. This finding is consistent with the results from the normative group. However, the risk of environmental influences on companies' markets is regarded as unimportant. The inter-disclosure comparisons indicate that financial, rather than quantitative or qualitative, disclosure is preferable, in one case. This finding is, again, consistent with that for the normative sample. However, there is a general lack of significant Wilcoxon results, which may indicate that, at present, disclosure by all three types would be useful, for risk information, at least, until it could be ascertained, which is preferred strongly. This interpretation of the results would seem to indicate that specialist disclosure, such as that required by the European Federation of Financial Analysts (EFFAS, 1994), may also be useful for interested parties generally. The results also suggest that the approaches adopted by Ceres and IBM are too narrow. Therefore, the approach taken by the United Nations (UNEP, 1994 and 1996a) of a



balance between the disclosure types would present itself as a more fruitful way of proceeding.

#### **(iv) Quantifiable Corporate Environmental Information**

In relation to the usefulness of alternative disclosure bases for information traditionally disclosed on a quantitative basis (see section 3.4(ii)), the descriptive statistics for quantifiable disclosure on a financial basis (table 7.4, part A) indicated that environmental incidents (proposition (1); mean = 2.29) and local environmental impact (proposition (2); mean = 2.24) are both perceived as useful sources of information for the interested party group. However, raw material use (proposition (10); mean = 1.92) and vehicle miles in relation to product (proposition (9); mean = 1.93) are considered less useful by the respondents. Wilcoxon tests (see appendix E, table 4, part A) indicated that raw material use is considered relatively unimportant and environmental incidents significantly more useful than several of the other proposed items.

On a quantitative basis, the results (table 7.4, part B) showed that environmental incidents (proposition (1); mean = 2.51) and generation and disposal of wastes (proposition (2); mean = 2.46) are perceived as useful by the respondents - the percentage ratings indicated that 55.2% of the respondents recorded a score of 3 whereas only 9.2% of the interested party respondents reported a score of 1. On the other hand, vehicle miles in relation to product (proposition (7); mean = 2.06) and noise and odour (proposition (9); mean = 2.07) are considered less useful by this group. Vehicle miles in relation to product, and noise and odour, appeared significantly less useful in relation to the majority of other propositions (see appendix E, table 4, part B).

**Table 7.4: Descriptive Statistics  
Quantifiable Corporate Environmental Information**

	<b>N</b>	<b>Mean</b>	<b>S.D.</b>	<b>P: 1</b>	<b>P: 3</b>
<b>Part A: Financial Disclosure</b>					
1. Environmental incidents.	76	2.29	0.78	19.7	48.7
2. Local environmental impact.	75	2.24	0.79	21.3	45.3
3. Generation and disposal of waste.	76	2.22	0.79	22.4	44.7
4. Soil contamination and remediation.	74	2.15	0.79	24.3	39.2
5. Air emissions.	74	2.11	0.84	29.7	40.5
6. Water effluents.	74	2.10	0.83	29.7	39.2
7. Energy consumption.	75	2.01	0.78	29.3	30.7
8. Noise and odour.	74	1.99	0.77	29.7	28.4
9. Vehicle miles in relation to product.	75	1.93	0.84	38.7	32.0
10. Raw material use.	74	1.92	0.77	33.8	25.7
<b>Part B: Quantitative Disclosure</b>					
1. Environmental incidents.	86	2.51	0.70	11.6	62.8
2. Generation and disposal of waste.	87	2.46	0.66	9.2	55.2
3. Air emissions.	87	2.46	0.76	16.1	62.1
4. Water effluents.	86	2.44	0.75	15.1	59.3
5. Local environmental impact.	86	2.40	0.74	15.1	54.7
6. Soil contamination and remediation.	86	2.37	0.70	12.8	50.0
7. Energy consumption.	86	2.35	0.76	17.4	52.3
8. Raw material use.	83	2.24	0.79	21.7	45.8
9. Noise and odour.	86	2.07	0.79	27.9	34.9
10. Vehicle miles in relation to product.	84	2.06	0.83	31.0	36.9

**Table 7.4 continued**

	N	Mean	S.D.	P: 1	P: 3
<b>Part C: Qualitative Disclosure</b>					
1. Environmental incidents.	73	2.43	0.76	16.4	58.9
2. Local environmental impact.	73	2.40	0.80	19.2	58.9
3. Soil contamination and remediation.	74	2.38	0.75	16.2	54.1
4. Generation and disposal of waste.	75	2.33	0.74	16.0	49.3
5. Air emissions.	74	2.32	0.78	18.9	51.4
6. Water effluents.	73	2.30	0.78	19.2	49.3
7. Energy consumption.	73	2.11	0.79	26.0	37.0
8. Noise and odour.	73	2.10	0.79	26.0	35.6
9. Raw material use.	73	2.00	0.78	30.1	30.1
10. Vehicle miles in relation to product.	71	1.92	0.84	39.4	31.0
11. None of the above = 9	Non-response = 0				
12. Others:					
(i) Annual reports. Full understandability of company strategies.					
(ii) Suggest differentiation between use of renewable and non-renewable resources.					

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 3-point scale where 1 = Never, 2 = Sometimes, and 3 = Always. P: 1 represents the percentage rating for the frequency of response for 1 (Never). P: 3 represents the percentage rating for the frequency of response for 3 (Always).

On a qualitative basis, the descriptive statistics (table 7.4, part C) showed that environmental incidents (proposition (1); mean = 2.43) and local environmental impact (proposition (2); mean = 2.40) believed to be important sources of information. However, the unimportance of vehicle miles in relation to product (proposition (10); mean = 1.92) was again emphasised. In the Wilcoxon tests, stronger preferences among the propositions were indicated for this type of disclosure than for financial, or quantitative (appendix E, table 4, part C) as environmental incidents, local environmental impact, soil contamination and remediation, generation and disposal of waste, and air

emissions are all considered relatively more useful than the majority of other propositions.

Inter-disclosure comparisons (appendix E, table 4, part D) indicated that disclosure on a quantitative basis is regarded as more useful than disclosure on a financial basis for all but two propositions.

In summary, the descriptive statistics indicated that the respondents value disclosure on environmental incidents in the three disclosure forms. However, energy consumption, noise and odour, raw material use, and vehicle miles in relation to product, were consistently shown to be less useful. The inter-disclosure comparisons showed that, in almost all cases, quantitative disclosure is preferred to financial. This supports the Ceres and IBM approach and is also consistent with findings for the normative respondent group. However, there are no results for qualitative, which indicates a need for experimentation in this area (the approach taken by IBM).

#### **(v) Benchmarking Corporate Environmental Performance Information**

The descriptive statistics relating to benchmarking (see section 3.4(ii)) on a financial basis (see table 7.5, part A) revealed that sustainable development (proposition (1); mean = 2.23) is seen as a very useful benchmark whereas industry average (proposition (3); mean = 2.10) is considered less useful by the interested party group. No strong preferences for any one of the proposed benchmarks on a financial basis were revealed through Wilcoxon tests.

**Table 7.5: Descriptive Statistics  
Benchmarking Corporate Environmental Performance Information**

	N	Mean	S.D.	P: 1	P: 3
<b>Part A: Financial Disclosure</b>					
1. Sustainable development.	79	2.23	0.73	17.7	40.5
2. Legal compliance.	78	2.13	0.75	21.8	34.6
3. Industry average.	78	2.10	0.75	23.1	33.3
<b>Part B: Quantitative Disclosure</b>					
1. Legal compliance.	80	2.38	0.72	13.8	51.3
2. Sustainable development.	83	2.36	0.74	15.7	51.8
3. Industry average.	82	2.27	0.75	18.3	45.1
<b>Part C: Qualitative Disclosure</b>					
1. Sustainable development.	81	2.44	0.74	14.8	59.3
2. Legal compliance.	79	2.35	0.75	16.5	51.9
3. Industry average.	80	2.25	0.79	21.3	46.3
4. None of the above = 8	Non-response = 2				
5. Others:					
(i) Comparative information is much more useful to me.					

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 3-point scale where 1 = Never, 2 = Sometimes, and 3 = Always. P: 1 represents the percentage rating for the frequency of response for 1 (Never). P: 3 represents the percentage rating for the frequency of response for 3 (Always).

On a quantitative basis, the descriptive statistics (table 7.5, part B) showed that legal compliance (proposition (1); mean = 2.38) is regarded an extremely useful benchmark, whereas industry average (proposition (3); mean = 2.27) is considered less important by the respondents. The null hypothesis for the Wilcoxon test was again accepted in all cases of comparison.

On a qualitative basis, the descriptive statistics (table 7.5, part C) indicated that sustainable development (proposition (1); mean = 2.44) is seen as useful by the respondents. On the other hand, industry average (proposition (3); mean = 2.25) was shown to be less important. Again, there were no significant comparative statistics.

The inter-disclosure comparisons (see appendix E, table 5) showed that the interested parties attach relatively less importance to financial disclosure than quantitative or qualitative for several benchmarks.

The findings indicate that the interested parties find industry average the least useful benchmark, with respect to the three types of disclosure. Industry average also received the lowest mean average scores for two of the three types of disclosure in the normative group's responses. As sustainable development is not advanced enough at present, then only legal compliance could be the appropriate benchmark, by force of elimination. Preference has been shown for quantitative over financial disclosure, showing support for Ceres (CERES, 1992) and the United Nations (UNEP, 1994 and 1996b), as well as consistency with the normative group's responses. Each of the four publications, referred to in this section, aims to establish some type of benchmarking. IBM aims to develop a framework to compare its performance with others in the information technology industry, but this framework also includes sustainable development, and legal compliance. The European Federation of Financial Analysts (EFFAS, 1994) would use an industry benchmark, which again would support a minority view for this stakeholder group. This is a particularly interesting finding, as this is comparable to the way in which financial analysts compare companies. Lastly, it is notable that for this part of the

enquiry, the interest parties demonstrate far less preference among the propositions than did the normative respondents, in their corresponding section in chapter six.

#### **(vi) Corporate Environmental Financial Information**

In relation to whether or not the interested parties consider information hitherto traditionally disclosed on a financial basis is potentially useful if expressed in other ways, i.e. quantitatively and/or qualitatively (see section 3.4(ii)), on a financial basis, the descriptive statistics (table 7.6, part A) showed that environmental fines and negotiated settlements (proposition (1); mean = 2.49) are seen as important by the respondents. Environmental liabilities (proposition (2); mean = 2.48) are also considered useful. At the other end of the scale, environmental benefits and opportunities (proposition (5); mean = 2.20) and donations to environmental charities (proposition (6); mean = 1.86) appeared to be less useful to the interested party group. Donations to environmental charities were shown to be relatively less important than all the other choices (appendix E, table 6, part A) .

On a quantitative basis, the descriptive statistics (table 7.6, part B) indicated that environmental fines and negotiated settlements (proposition (1); mean = 2.32) and environmental liabilities (proposition (2); mean = 2.29) are seen as important. However, government environmental taxes and charges (proposition (5); mean = 2.19) and donations to environmental charities (proposition (6); mean = 1.76) are not regarded as important by the interested parties. Again, donations to environmental charities were revealed as significantly less important than the other propositions (see Wilcoxon results in appendix E, table 6, part B).

**Table 7.6: Descriptive Statistics  
Corporate Environmental Financial Information**

	N	Mean	S.D.	P: 1	P: 3
<b>Part A: Financial Disclosure</b>					
1. Environmental fines and negotiated settlements.	85	2.49	0.72	12.9	62.4
2. Environmental liabilities.	83	2.48	0.72	13.3	61.4
3. Environmental spending.	84	2.35	0.69	11.9	46.4
4. Government environmental taxes and charges.	83	2.25	0.78	20.5	45.8
5. Environmental benefits and opportunities.	82	2.20	0.71	17.1	36.3
6. Donations to environmental charities.	78	1.86	0.79	38.5	24.4
<b>Part B: Quantitative Disclosure</b>					
1. Environmental fines and negotiated settlements.	73	2.32	0.76	17.8	49.3
2. Environmental liabilities.	73	2.29	0.74	16.4	45.2
3. <sup>a</sup> Environmental benefits and opportunities.	74	2.23	0.71	16.2	39.2
3. <sup>b</sup> Environmental spending.	74	2.23	0.71	16.2	39.2
5. Government environmental taxes and charges.	73	2.19	0.72	17.8	37.0
6. Donations to environmental charities.	71	1.76	0.78	45.1	21.1
<b>Part C: Qualitative Disclosure</b>					
1. Environmental spending.	71	2.25	0.77	19.7	45.1
2. Environmental benefits and opportunities.	70	2.21	0.74	18.6	40.0
3. Environmental liabilities.	69	2.20	0.78	21.7	42.0
4. Environmental fines and negotiated settlements.	70	2.17	0.80	24.3	41.4
5. Government environmental taxes and charges.	69	2.10	0.75	23.2	33.3
6. Donations to environmental charities.	68	1.81	0.80	42.6	23.5
7. None of the above = 6					
					Non-response = 1

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 3-point scale where 1 = Never, 2 = Sometimes, and 3 = Always. P: 1 represents the percentage rating for the frequency of response for 1 (Never). P: 3 represents the percentage rating for the frequency of response for 3 (Always). Note that the superscripts a and b indicate that the mean average statistics, the standard deviations and the percentage ratings have tied for the two propositions to which they refer.



The descriptive statistics describing the propositions on a qualitative basis (table 7.6, part C) showed that environmental spending (proposition (1); mean = 2.25) received the highest mean average score.<sup>1</sup> Environmental benefits and opportunities (proposition (2); mean = 2.21) are also regarded as important. The proposition receiving the lowest mean average score was again donations to environmental charities (proposition (6); mean = 1.81). The significant relative unimportance of this item was statistically emphasised for this type of disclosure (appendix E, table 6, part C).

The inter-disclosure comparisons (see appendix E, table 6, part D) revealed that financial disclosure is preferred to qualitative disclosure for two propositions.

To summarise, the findings indicate that the interested parties have least use for disclosure on donations to environmental charities, on any basis, which is, incidentally, the one legal requirement in corporate social reporting. Again, this finding imitates the attitude of the normative group. Given that this type of information is legislated for, and that the United Nations include it as one of their 50 reporting ingredients (see UNEP, 1994 and 1996a), this is a disappointing finding. The inter-disclosure comparisons reveal that the respondents do show some preference for financial disclosure, but that the evidence is not weighty. The general lack of interest in these financial indicators shown by IBM is perhaps due to their disclosure appearing in the financial statements. The Ceres Report does require financial and quantitative disclosure in its compliance section.

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<sup>1</sup> This finding suggests that what the interested parties require is not solely the amount of money spent on the environment, but some indication of how well the money has been spent, i.e. a qualitative assessment.

## **(vii) Corporate Environmental Management Information**

In relation to the usefulness of environmental management information (see section 3.4(ii)), on a financial basis, the descriptive statistics (see table 7.7, part A) revealed that land contamination and remediation (proposition (1); mean = 2.34) received the highest mean average score from the interested party respondents, indicating its usefulness to interested parties. Compliance with legislation (proposition (2); mean = 2.32) was also shown to be of considerable use. At the other end of the scale, health and safety (proposition (10); mean = 2.04) and accident and emergency response (proposition (11); mean = 1.82) are not considered very useful by the respondents. Accident and emergency response is considered significantly less important than all the other propositions, whereas land contamination and remediation, and compliance with legislation, received significantly higher scores than several of the other choices (see appendix E, table 7, part A).

On a quantitative basis, the descriptive statistics (see table 7.7, part B) revealed that compliance with legislation (proposition (1); mean = 2.49) received the highest mean average score from the respondents. Of the respondents, 58.2% recorded a score of 3, whereas only 8.9% of them reported a score of 1. Land contamination and remediation (proposition (2); mean = 2.48) is also regarded as important by the interested party group. Those propositions receiving lower mean average scores included environmental integration of business (proposition (10); mean = 2.25) and accident and emergency response (proposition (11); mean = 1.96). Again, accident and emergency response, is considered significantly less important than nearly all the propositions, whereas compliance with legislation, and land contamination and remediation, are considered

**Table 7.7: Descriptive Statistics  
Corporate Environmental Management Information**

	<b>N</b>	<b>Mean</b>	<b>S.D.</b>	<b>P: 1</b>	<b>P: 3</b>
<b>Part A: Financial Disclosure</b>					
1. Land contamination and remediation.	71	2.34	0.81	21.1	54.9
2. Compliance with legislation.	71	2.32	0.79	19.7	52.1
3. Risk assessment.	69	2.22	0.75	18.8	40.6
4. Environmental impact assessment.	70	2.20	0.75	20.0	40.0
5. Setting measurable environmental targets and objectives.	73	2.18	0.71	17.8	35.6
6. Environmental management system.	70	2.17	0.74	20.0	37.1
7. Hazard assessment.	68	2.15	0.80	25.0	39.7
8. Compliance with industry standards.	68	2.12	0.78	25.0	36.8
9. Environmental integration of business.	69	2.09	0.72	21.7	30.4
10. Health and safety.	68	2.04	0.76	26.5	30.9
11. Accident and emergency response.	68	1.82	0.71	35.3	17.6
<b>Part B: Quantitative Disclosure</b>					
1. Compliance with legislation.	79	2.49	0.66	8.9	58.2
2. Land contamination and remediation.	79	2.48	0.66	8.9	57.0
3. Environmental impact assessment.	77	2.46	0.70	11.7	57.1
4. Setting measurable environmental targets and objectives.	82	2.45	0.63	7.3	52.4
5. Environmental management system.	75	2.37	0.71	13.3	50.7
6. Health and safety.	76	2.32	0.72	14.5	46.1
7. Hazard assessment.	77	2.29	0.72	15.6	44.2
8. Compliance with industry standards.	76	2.28	0.70	14.5	42.1
9. Risk assessment.	77	2.26	0.70	14.3	40.3
10. Environmental integration of business.	69	2.25	0.74	17.4	42.0
11. Accident and emergency response.	76	1.96	0.76	30.3	26.3

**Table 7.7 continued**

	N	Mean	S.D.	P: 1	P: 3
<b>Part C: Qualitative Disclosure</b>					
1. Environmental impact assessment.	73	2.48	0.73	13.7	61.6
2. Setting measurable environmental targets and objectives.	80	2.46	0.67	10.0	56.3
3. Compliance with legislation.	77	2.43	0.73	17.3	57.1
4. Land contamination and remediation.	74	2.42	0.68	10.8	52.7
5. Environmental management system.	73	2.34	0.71	13.7	47.9
6. Health and safety.	73	2.32	0.74	16.4	47.9
7. Hazard assessment.	72	2.26	0.73	16.7	43.1
8. Compliance with industry standards.	74	2.24	0.74	17.6	41.9
9. Risk assessment.	71	2.23	0.74	18.3	40.8
10. Environmental integration of business.	66	2.21	0.76	19.7	40.9
11. Accident and emergency response.	71	1.99	0.77	29.6	28.2
12. None of the above = 4	Non-response = 2				
13. Others:					
(i) Do not agree that you can offset risk benefit where human health is concerned. "Risk assessment" is industry's way to make the intolerable seem tolerable.					

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 3-point scale where 1 = Never, 2 = Sometimes, and 3 = Always. P: 1 represents the percentage rating for the frequency of response for 1 (Never). P: 3 represents the percentage rating for the frequency of response for 3 (Always).

significantly more important (appendix E, table 7, part B) by the respondents, in several cases.

The statistics describing the responses on a qualitative basis (table 7.7, part C) indicated that environmental impact assessment (proposition (1); mean = 2.48) received the highest mean average score from the interested party respondents. Also of importance, is setting measurable environmental targets and objectives (proposition (2); mean = 2.46). There

is considerable normative support for benchmarking (see Gray *et al.*, 1996a). This finding suggests that quantitative disclosure is the most useful type for the interested party sample group. Of less interest to the respondents are environmental integration of business (proposition (10); mean = 2.21) and, yet again, accident and emergency response (proposition (11); mean = 1.99). The Wilcoxon results (appendix E, table 7, part C) again confirmed the relative lack of importance attached to accident and emergency response. The findings also showed that on a qualitative basis, environmental impact assessment received relatively higher scores.

Inter-disclosure comparisons (see appendix E, table 7, part D) emphasised the greater usefulness of quantitative and qualitative over financial disclosure for a few propositions.

In summary, the results indicate that accident and emergency response disclosure from a management perspective is of little relevance to the interested party group. The findings are generally mixed, but there is some indication that compliance with legislation, and land contamination and remediation, from a management perspective, would be useful in reducing informational asymmetry. Interestingly, setting measurable environmental targets and objectives on a qualitative basis is important, suggesting some sort of reality perspective. Information asymmetry is a substantial problem in corporate reporting. One way of reducing this problem is verification. The IBM and Ceres Report are verified. The European Federation of Financial Analysts asks if disclosure is verified, as does the United Nations.

## **7.2.2 Attitudes Towards Corporate Environmental Reporting**

This section considers the assessing and reporting of environmental incidents, and the time period and communication of corporate environmental reporting, which were discussed in sections 3.4(iii) and (iv) respectively.

### **(i) Assessing and Reporting Environmental Incidents**

The statistics describing the characteristics of the responses to assessing impact (see table 7.8, part A) revealed that company employees (proposition (1); mean = 2.31) receive the highest mean average score. The Department of the Environment (proposition (2); mean = 2.15) was also shown as important for assessing impact. However, the Department of Agriculture (proposition (8); mean = 1.92) and the Department of Trade and Industry (proposition (9); mean = 1.89) are seen as less important for assessing the impact of environmental incidents. Wilcoxon tests (appendix E, table 8, part A) indicated that the Department of Trade and Industry is considered significantly less important as an agent for assessing the impact of environmental incidents than the majority of proposed agents, whereas company employees are more highly rated by the respondents.

The descriptive statistics relating to the reporting of environmental incident impact (see table 7.8, part B) showed that company employees (proposition (1); mean = 2.47) again received the highest mean average score. Quangos (proposition (2); mean = 2.22) are also considered to be important by the interested party group. At the other end of the scale, the Department of Trade and Industry (proposition (8); mean = 1.89) and central government (proposition (9); mean = 1.89) are perceived as unimportant bodies in

**Table 7.8: Descriptive Statistics  
Assessing and Reporting Environmental Incidents**

	N	Mean	S.D.	P: 1	P: 3
<b>Part A: Assess Impact</b>					
1. Company employees.	78	2.31	0.73	15.4	46.2
2. The Department of the Environment.	80	2.15	0.68	16.3	31.3
3. Quango eg. National Rivers Authority.	78	2.15	0.70	17.9	33.3
4. Local Authority and Independent consultants.	76	2.12	0.59	11.8	23.7
5. Local Authority.	74	2.11	0.65	16.2	27.0
6. Independent consultants	77	1.96	0.52	15.6	11.7
7. Central Government.	74	1.92	0.68	27.0	18.9
8. The Department of Agriculture.	76	1.92	0.61	22.4	14.5
9. The Department of Trade and Industry.	74	1.81	0.66	32.4	13.5
<b>Part B: Report Impact</b>					
1. Company employees.	81	2.47	0.69	11.1	58.0
2. Quango eg. National Rivers Authority.	77	2.22	0.74	18.2	40.3
3. Local Authority.	75	2.19	0.65	13.3	32.0
4. The Department of the Environment.	79	2.15	0.68	16.5	31.6
5. Local Authority and Independent consultants.	73	2.11	0.64	15.1	26.0
6. The Department of Agriculture.	74	1.95	0.66	24.3	18.9
7. Independent consultants	77	1.94	0.55	18.2	11.7
8. The Department of Trade and Industry.	74	1.89	0.67	28.4	17.6
9. Central Government.	73	1.89	0.70	30.1	19.2
10. None of the above = 5	Non-response = 3				
11. Others:					
(i) Central Government will be involved via DoE, DTI, MAFF, but in terms of separate investigation, I believe it would only be necessary for very serious incidents.					
(ii) A fully independent quango with high environmental standards and a remit that includes total access to the site and records would be ideal. However, this does not happen in practice.					
(iii) Depends on the incident. A small spill is different from a nuclear accident.					
(iv) Health and safety executive.					

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 3-point scale where 1 = Never, 2 = Sometimes, and 3 = Always. P: 1 represents the percentage rating for the frequency of response for 1 (Never). P: 3 represents the percentage rating for the frequency of response for 3 (Always).

reporting environmental incident impact. Comparative tests (in appendix E, table 8, part B) indicated the relative importance of company employees in reporting environmental impacts, as well as the relative unimportance of central government.

The analysis confirms the approach adopted by the Ceres Principles in that company employees are perceived as the most appropriate agents to assess and/or report environmental incidents. This finding is consistent with that for the normative group of respondents. The fundamental problem is that employees may not be perceived by some as "independent". It would seem that the Department of Trade and Industry has the least credibility in this area, again a consistent finding with that for the normative respondents.

#### **(ii) Time Period and Communication of Corporate Environmental Reporting**

The descriptive statistics for the interested party respondents (table 7.9) showed that environmental information within the published company annual report (proposition (1); mean = 2.52) received the highest mean average score from the interested party group: of the respondents, 65.1% reported a score of 3, whereas 12.8% recorded a score of 1. Also of importance, was a stand alone published environmental company report on an annual basis (proposition (2); mean = 2.46). The combination of less importance to the interested party group was a stand alone published environmental company report every 3 months (proposition (8); mean = 1.54) and annual stand alone published company environmental report plus interim environmental statement every 3 months (proposition (9); mean = 1.51). Statistically, the preferred combination of time period and communication of corporate environmental disclosure is environmental information



**Table 7.9: Descriptive Statistics  
Time Period and Communication of Corporate Environmental Reporting**

	N	Mean	S.D.	P: 1	P: 3
1. Environmental information within the published Company annual report.	86	2.52	0.72	12.8	65.1
2. Stand alone published environmental company report annually.	79	2.46	0.69	11.4	57.0
3. Environmental information within the published Company annual report plus the half yearly Interim statement.	79	1.99	0.67	22.8	21.5
4. Annual stand alone published Company environmental report plus an Interim environmental statement every 6 months.	74	1.85	0.70	32.4	17.6
5. Specially published Company environmental report at company`s discretion.	79	1.80	0.71	36.7	16.5
6. Press release at company`s discretion.	80	1.79	0.71	37.5	16.3
7. Stand alone published environmental company report every 6 months.	61	1.75	0.65	36.1	11.5
8. Stand alone published environmental company report every 3 months.	63	1.54	0.67	55.6	9.5
9. Annual stand alone published Company environmental report plus Interim environmental statement every 3 months.	75	1.51	0.65	57.3	8.0
10. None of the above = 6                      Non-response = 1					
11. Others:					
(i) These reports could be a waste of time and a smoke screen until we have rigorous environmental laws concerning company activity, strictly monitored and enforced (by carrot and stick)!					

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 3-point scale where 1 = Never, 2 = Sometimes, and 3 = Always. P: 1 represents the percentage rating for the frequency of response for 1 (Never). P: 3 represents the percentage rating for the frequency of response for 3 (Always).

within the published company annual report (see appendix E, table 9). The combination of annual stand alone published company environmental report plus interim environmental statement every 3 months is considered significantly less important than the majority of other choices propositions.

A factor analysis (see table 7.10) was performed to ascertain whether or not the respondents' attitudes fall into general groups, known as factors (see section 6.2.2(ii) for details of the factor analysis technique employed). The results showed that the respondents' views do fall under three factors, which seem to represent the following categories of attitude :

- (i) reporting which is too frequent (propositions (3), (4), (7), (8) and (9));
- (ii) the preferred environmental reporting time period and communication (propositions (1) and (2));
- (iii) reporting at companies' discretion (propositions (5) and (6)).

The factor analysis is concise and clearly indicates that highly frequent disclosure is of little benefit to the interested party group. Factor (ii) would seem to represent the reality of the present framework for time period and communication of environmental information, for the interested party respondents.

In summary, the analysis indicates a preference for environmental information within the published annual report (a positive finding for the accounting profession as it again confirms the *status quo!*), or an annual stand alone environmental report. This finding supports the United Nations (UNEP, 1994), the European Federation of Financial Analysts Society (EFFAS, 1994), and Ceres (CERES, 1992) but not the IBM (IBM, 1995) approach. Furthermore, the findings again coincide with the attitudes of the normative respondents.

**Table 7.10: Factor Matrix: Varimax Orthogonal Rotation  
Time Period and Communication of Corporate Environmental Reporting**

	Factor		
	1	2	3
1. Environmental information within the published Company annual report.		0.6283	
2. Stand alone published environmental company report annually.		0.8746	
3. Environmental information within the published Company annual report plus the half yearly Interim statement.	0.6187		
4. Annual stand alone published Company environmental report plus an Interim environmental statement every 6 months.	0.7134		
5. Specially published Company environmental report at company`s discretion.			0.7785
6. Press release at company`s discretion.			0.8550
7. Stand alone published environmental company report every 6 months.	0.7574		
8. Stand alone published environmental company report every 3 months.	0.8932		
9. Annual stand alone published Company environmental report plus Interim environmental statement every 3 months.	0.9001		
Cumulative Percentage of Variance Explained	46.9	64.0	76.1

Only the largest factor loadings are shown for each variable.

### **7.2.3 Attitudes Towards the Current Framework of Corporate Environmental Disclosure**

#### **(i) Users of Corporate Environmental Disclosure**

In relation to the importance of corporate environmental disclosure to the suggested user groups (see section 3.4(v)), the descriptive statistics (table 7.11) indicated that ethical investors (proposition (1); mean = 4.56) received the highest mean average score. Of the respondents, 89.7% reported a score of 4 or 5, whereas only 2.3% recorded a score of

**Table 7.11: Descriptive Statistics  
Users of Corporate Environmental Disclosure**

	<b>N</b>	<b>Mean</b>	<b>S.D.</b>	<b>P: 1, 2</b>	<b>P: 4, 5</b>
1. Ethical investors.	87	4.56	0.74	2.3	89.7
2. Environmental groups.	87	4.26	0.90	3.4	80.5
3. Local communities.	88	4.15	1.01	4.5	71.6
4. Legislators and regulators.	86	4.15	1.06	5.8	76.7
5. Media.	88	3.91	1.04	5.7	63.7
6. Quangos eg. National Rivers Authority.	88	3.88	1.08	10.2	62.5
7. Employees.	87	3.87	1.12	9.2	56.3
8. Potential investors.	86	3.83	1.08	8.1	59.3
9. Customers.	86	3.80	1.02	8.1	57.0
10. Local government.	88	3.78	0.98	8.0	55.7
11. Shareholders.	86	3.74	1.05	8.1	52.4
12. Insurance companies.	88	3.72	1.07	8.0	51.1
13. Central government.	86	3.36	1.13	25.6	46.5
14. Banks.	85	3.32	1.13	17.6	40.0
15. Industry associations.	86	3.13	1.08	31.4	37.2
16. Suppliers.	85	3.12	1.20	31.8	37.7
17. Stock market.	84	3.11	1.18	31.0	40.5
18. Others:					
(i) The stock market probably doesn't think this important, we think they should.					
(ii) Enforcers.					
(iii) General public and accountability.					

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 5-point scale where 1 = Not Important, 3 = Important, and 5 = Very Important. P: 1, 2 represents the percentage rating for the combined frequency of response for 1 (Not Important) and 2. P: 4, 5 represents the percentage rating for the combined frequency of response for 4 and 5 (Very Important).

1 or 2. In fact, all the propositions, inclusive of 1 to 12, showed a very high percentage rating for 4 and 5. Those users whom the respondents perceive as relatively unimportant, are suppliers (proposition (16); mean = 3.12) and the stock market (proposition (17): mean = 3.11). Wilcoxon tests (appendix E, table 10) showed that ethical investors are seen as significantly more important users of environmental disclosure than all the other choices, whereas, central government, banks, industry associations, suppliers and stock market all received significantly lower scores than the other users.

The factor analysis revealed that the respondents' attitudes fell into four general factors. These seemed to represent the following :

- (i) finance and policing (propositions (6), (8), (11), (12), (14), (15) and (17));
- (ii) government (propositions (4), (10) and (13));
- (iii) primary stakeholder audience (propositions (3), (7), (9) and (16)), and;
- (iv) environmental/public relations audience (propositions (1), (2) and (5)).

The factor analysis (see table 7.12) seems to have divided the empirical results by the perceived function that reporting needs to play for each group. This would seem to suggest that each of these groups has its own subset of requirements. For example, the European Federation of Financial Analysts may be associated primarily with factor (i). The United Nations may be associated primarily with factor (ii). Factors (iii) and (iv) may be associated initially with the Ceres and IBM approaches.

Overall, the findings indicate that ethical investors represent the most important stakeholder group. This does contradict the findings for the normative sample, where

**Table 7.12: Factor Matrix: Varimax Orthogonal Rotation  
Users of Corporate Environmental Disclosure**

	Factor			
	1	2	3	4
1. Ethical investors.				0.7348
2. Environmental groups.				0.8741
3. Local communities.			0.5336	
4. Legislators and regulators.		0.5971		
5. Media.				0.7048
6. Quangos eg. National Rivers Authority.	0.5880			
7. Employees.			0.6081	
8. Potential investors.	0.6441			
9. Customers.			0.7745	
10. Local government.		0.8447		
11. Shareholders.	0.6502			
12. Insurance companies.	0.6470			
13. Central government.		0.7589		
14. Banks.	0.8165			
15. Industry associations.	0.6354			
16. Suppliers.			0.7987	
17. Stock market.	0.8604			
Cumulative Percentage of Variance Explained	42.4	53.4	62.7	71.2

Only the largest factor loadings are shown for each variable.

legislators and regulators, and local communities were regarded as most important. The importance of ethical investors would suggest that financial disclosure of environmental information would also be important, as both accountability, and economic decision usefulness would have to be considered. This confirms that financial and environmental reporting share some common stakeholders. Also, the findings suggest that Ceres, the European Federation of Financial Analysts, IBM and United Nations share a substantial

amount of stakeholders - this is essential to the development of a conceptual framework for corporate environmental reporting.

## **(ii) Bearing the Cost of Corporate Environmental Disclosure**

Regarding cost allocation (see section 3.4(vi)), the descriptive statistics (table 7.13) showed that interested parties perceive that the company should absorb the full cost of corporate environmental disclosure (proposition (1); mean = 4.45). Of the respondents, 86.2% reported a score of 4 or 5, whereas only 6.9% recorded a score of 1 or 2. The interested party respondents strongly opposed the view that the interested party should pay (proposition (4); mean = 1.92) - of the respondents, 73.2% reported a score of 1 or 2 and only 9.8% of them recorded a score of 4 or 5. Wilcoxon tests (see appendix E, table 11) showed that the respondents attach significantly more importance to the idea that the company should absorb the full cost rather than the government, an allocation of cost between the company and interested parties, and the interested parties themselves.

In summary, the analysis supports the *a priori* view that companies should bear the cost of environmental disclosure, as with financial reporting. This conforms entirely with the responses from the normative group in section 6.3.3(ii). A subsequent question for free marketers is therefore "what effect is the cost of this disclosure likely to have on earnings per share"? (see *The Economist*, September, 1993).

**Table 7.13: Descriptive Statistics  
Bearing the Cost of Corporate Environmental Disclosure**

	N	Mean	S.D.	P: 1, 2	P: 4, 5
1. The company should absorb the full cost.	87	4.45	1.01	6.9	86.2
2. The Government via a system of company tax credits.	81	2.20	1.35	60.5	19.7
3. There should be an allocation of cost between the company and interested party.	82	1.93	1.04	64.6	7.3
4. The interested party should pay.	82	1.92	1.15	73.2	9.8
5. Others:					
(i) Perhaps a system of training, grants, loans for small, new and old industries with financial consultants paid by Government through a green tax					
(ii) How can small companies be expected to pay for information? If a company is harming the environment and public health, the Government should make the information available and put the cost onto the polluter.					

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 5-point scale where 1 = Strongly Disagree, 3 = Neutral, and 5 = Strongly Agree. P: 1, 2 represents the percentage rating for the combined frequency of response for 1 (Strongly Disagree) and 2. P: 4, 5 represents the percentage rating for the combined frequency of response for 4 and 5 (Strongly Agree).

### **(iii) Possible Qualitative Characteristics of Corporate Environmental Disclosure**

The descriptive statistics for the possible qualitative characteristics (see section 3.4(vii)) of corporate environmental disclosure (table 7.14) revealed that understandability (proposition (1); mean = 4.72) received the highest mean average score. Of the respondents, 94.2% reported a score of 4 or 5 whereas none of the respondents recorded a score of 1 or 2. The same trend can be seen for propositions (2) to (13). Those qualitative characteristics regarded as relatively unimportant included predictive value (proposition (17); mean = 3.56) and prudence (proposition (18); mean = 3.31). Understandability, reliability, faithful representation, relevance, and a true and fair view were all shown to be significantly more important to the respondents for nearly all the other qualitative characteristics proposed (see appendix E, table 12).



**Table 7.14: Descriptive Statistics  
Possible Qualitative Characteristics of Corporate Environmental Disclosure**

	N	Mean	S.D.	P: 1, 2	P: 4, 5
1. Understandability.	86	4.72	0.57	0.0	94.2
2. Reliability.	85	4.48	0.70	1.2	90.6
3. Faithful Representation.	82	4.48	0.81	1.2	83.0
4. Relevance.	87	4.46	0.78	0.0	82.7
5. A true and fair view.	84	4.39	0.90	4.8	81.0
6. Freedom from error.	83	4.35	0.83	1.2	79.5
7. Valid description.	82	4.35	0.87	0.0	74.4
8. Consistency.	85	4.20	0.83	0.0	74.1
9. Corresponding information for the previous period.	85	4.07	0.99	9.4	74.2
10. Completeness.	83	4.06	0.89	2.4	72.2
11. Substance Over Form	81	4.03	0.99	4.9	70.4
12. Comparability.	84	3.98	0.94	4.8	67.8
13. Confirmation of information.	82	3.84	1.02	8.5	59.7
14. Neutrality.	82	3.83	1.17	11.0	58.5
15. Materiality.	79	3.82	1.05	10.1	63.2
16. Timeliness.	86	3.57	1.15	15.1	51.1
17. Predictive value.	82	3.56	1.08	13.4	45.1
18. Prudence.	77	3.31	1.16	22.1	42.9
19. Others:					
(i) Re: "A true and fair view". Is this accountant speak for a complete tissue of lies?					

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 5-point scale where 1 = Not Important, 3 = Important, and 5 = Very Important. P: 1, 2 represents the percentage rating for the combined frequency of response for 1 (Not Important) and 2. P: 4, 5 represents the percentage rating for the combined frequency of response for 4 and 5 (Very Important).

A factor analysis (see table 7.15) was performed to examine the general attitudes of the respondents towards this area. Four factors were found through the factor analysis which seem to represent the following attitudes :

- (i) qualitative characteristics for comparability (propositions (6), (9), (10), (12), (16) and (18));
- (ii) less important qualitative characteristics (propositions (8), (11), (13), (14), (15) and (17));
- (iii) qualitative characteristics for fair presentation (propositions (2), (3), (5) and (7)), and;
- (iv) principal qualitative characteristics (propositions (1) and (4)).

Major issues for this respondent group in environmental reporting therefore include comparability, fair presentation, understandability, and relevance of disclosure. These are areas in which a conceptual framework for corporate environmental reporting would assist the interested party group. Comparison of these results with those obtained for the normative respondents reveal that their attitudes load onto generally similar factors.

In summary, the statistical results indicate that all the qualitative characteristics presented for financial reporting are also useful for environmental reporting. This general importance of all the characteristics was also found for the normative respondent group. Wilcoxon statistics revealed that understandability, reliability, and faithful representation as individual characteristics, are the most important - these were also the most important characteristics from the normative group's perspective. These findings provide some evidence for the usefulness of accounting techniques and methodology in environmental reporting, as suggested by the United Nations (UNEP, 1996b) and the European Federation of Financial Analysts (EFFAS, 1994).

**Table 7.15: Factor Matrix: Varimax Orthogonal Rotation  
Possible Qualitative Characteristics of Corporate Environmental Disclosure**

	Factor			
	1	2	3	4
1. Understandability.				0.7219
2. Reliability.			0.5952	
3. Faithful Representation.			0.7592	
4. Relevance.				0.8819
5. A true and fair view.			0.7871	
6. Freedom from error.	0.6336			
7. Valid description.			0.7216	
8. Consistency.		0.5761		
9. Corresponding information for the previous period.	0.5331			
10. Completeness.	0.4682			
11. Substance Over Form		0.7049		
12. Comparability.	0.7371			
13. Confirmation of information.		0.7665		
14. Neutrality.		0.5002		
15. Materiality.		0.4706		
16. Timeliness.	0.8423			
17. Predictive value.		0.8501		
18. Prudence.	0.8770			
Cumulative Percentage of Variance Explained	42.5	52.8	61.0	67.9

Only the largest factor loadings are shown for each variable.

#### **(iv) Proposed Elements of a Conceptual Framework for Corporate Environmental Reporting**

The descriptive statistics for the proposed elements (see section 3.4(viii)) for a conceptual framework for corporate environmental reporting (table 7.16) indicated that water (proposition (1); mean = 4.72) received the highest mean average score. Of the

**Table 7.16: Descriptive Statistics  
Proposed Elements of a Conceptual Framework for Corporate Environmental Reporting**

	N	Mean	S.D.	P: 1, 2	P: 4, 5
1. Water.	83	4.72	0.55	0.0	95.2
2. Land.	83	4.69	0.60	0.0	92.8
3. Air.	83	4.66	0.65	1.2	92.8
4. Sound.	81	4.14	0.89	2.5	75.3
5. Others:					
(i) Companies should address their major environmental inputs including all of the above.					
(ii) Consumables, foodstuffs, drinks.					
(iii) Depends on each company's business (comment made by 2 respondents).					
(iv) Appearance.					
(v) Health and safety (comment made by 2 respondents).					
(vi) Energy-consumed and embodied.					
(vii) Visual impact, smell.					
(viii) A completely holistic approach.					
(ix) Odour.					
(x) Biodiversity.					
(xi) Energy, waste, health.					
(xii) Resources, biodiversity and habitat, societies, eco-justice, ethical issues, energy, product/service use, transport, etc. etc.					
(xiii) People and animals, toxics, etc.					

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 5-point scale where 1 = Strongly Disagree, 3 = Neutral, and 5 = Strongly Agree. P: 1, 2 represents the percentage rating for the combined frequency of response for 1 (Strongly Disagree) and 2. P: 4, 5 represents the percentage rating for the combined frequency of response for 4 and 5 (Strongly Agree).

respondents, 95.2% reported a score of 4 or 5 and none of them recorded a score of 1 or 2. This pattern is consistent for all the propositions in this section. However, sound (proposition (4); mean = 4.14) is regarded as relatively less important than the others, though only marginally. Comparative statistical tests (appendix E, table 13) indicated

that sound is considered significantly less important than the other three proposed elements, demonstrating consistency with the normative group's responses.

The statistical tests confirm that the respondents strongly agree that all the proposed elements for corporate environmental reporting would be useful. Water, land and air are distinguished as being more important than sound. These findings provide evidence for using air, land, water and sound as elements for measurement in an environmental reporting conceptual framework, supporting the approach of the Environmental Protection Act (1990).

#### **(v) Verification of Corporate Environmental Disclosure**

Regarding verification (see section 3.4(ix)), the descriptive statistics (table 7.17) revealed that a registered auditor of the Environmental Auditors Registration Association (proposition (1); mean = 3.62) received the highest mean average score. Of the respondents, 67% recorded a score of 4 or 5, with only 13.4% recording a score of 1 or 2. Accountants within their existing framework (proposition (6); mean = 2.48) are regarded as less important verifiers of corporate environmental disclosure. However, the respondents indicated that the notion of verification not being necessary was the least important of the propositions (proposition (7); mean = 1.36) - for this proposition, 90.4% of the respondents recorded a score of 1 or 2 and only 2.4% recorded a score of 4 or 5. Wilcoxon tests (appendix E, table 14) emphasised a preference for a registered auditor of the environmental auditors registration association, environmental consultants, and a new professional body as verifiers of environmental disclosure.

**Table 7.17: Descriptive Statistics  
Verification of Corporate Environmental Disclosure**

	N	Mean	S.D.	P: 1, 2	P: 4, 5
1. A registered auditor of The Environmental Auditors' Registration Association.	82	3.62	1.19	13.4	67.0
2. Environmental consultants within their existing framework.	82	3.59	0.94	9.8	57.3
3. A new professional body that includes accountants, scientists and environmental consultants.	81	3.57	1.16	13.6	55.6
4. Scientists within their existing framework.	80	3.09	1.19	32.5	33.8
5. Internal management team.	82	2.70	1.22	51.2	29.2
6. Accountants within their existing framework.	83	2.48	1.25	54.2	19.2
7. Verification is not necessary.	83	1.36	0.77	90.4	2.4
8. Others:					
(i) Community representatives					

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 5-point scale where 1 = Strongly Disagree, 3 = Neutral, and 5 = Strongly Agree. P: 1, 2 represents the percentage rating for the combined frequency of response for 1 (Strongly Disagree) and 2. P: 4, 5 represents the percentage rating for the combined frequency of response for 4 and 5 (Strongly Agree).

In summary, the statistical results confirm the views expressed in the literature, that verification is necessary. However, 2% of the respondents perceive it as unnecessary. A registered auditor is the preferred agent for verification, whereas accountants are the least favoured. These findings contrast slightly with those from the normative group responses, as environmental consultants within their existing framework are regarded as the most important verifiers of environmental disclosure. However, this may be due to the inclusion of a substantial proportion of environmental consultants within the normative sample. Both the normative and interested party groups agree that accountants are the least useful agents for verifying environmental disclosure. The findings suggest a multidisciplinary approach under the auspices of the Environmental Auditors Registration Association, rather than an accounting body, in order to take into account

different stakeholder needs. This supports the view of the European Federation of Accountants (see EAAR, February, 1996).

#### **(vi) Suggested Motives For Corporate Environmental Disclosure**

In relation to motives for corporate environmental disclosure (see section 3.4(i)) the descriptive statistics (table 7.18) revealed that to improve the company's corporate image (proposition (1); mean = 4.20) received the highest mean average score. Of the respondents, 94.3% recorded a score of 4 or 5, whereas only 1.1% reported a score of 1 or 2. Also, the motives to market the company (proposition (2); mean = 4.02), to market company products (proposition (3); mean = 3.93) and pressure from customers/consumers (proposition (4); mean = 3.79) all received high average scores. Those motives regarded as less important by the respondents include the motive of acknowledging social responsibility (proposition (11); mean = 3.16) and, a result of company ethics (proposition (12); mean = 3.05). Wilcoxon tests (appendix E, table 15) indicated that improving the company's corporate image is attributed significantly more importance than the other motives, whereas company ethics is perceived as a significantly less motivating factor.

Factor analysis (see table 7.19) showed that the respondents' views fell under four general attitude groups. These are:

- (i) ethical pressure motives (propositions (4), (8), (10), (11) and (12));
- (ii) marketing motives (propositions (2) and (3));
- (iii) accountability motives (propositions (5) and (7)) and;
- (iv) primary motives (propositions (1), (6) and (9)).

**Table 7.18: Descriptive Statistics  
Suggested Motives For Corporate Environmental Disclosure**

	N	Mean	S.D.	P: 1, 2	P: 4, 5
1. To improve the company's corporate image.	87	4.28	0.60	1.1	94.3
2. To market the company.	85	4.02	0.74	4.7	87.1
3. To market company products.	86	3.93	0.79	5.8	80.3
4. Pressure from customers / consumers.	87	3.79	0.68	4.6	73.5
5. To comply with regulations.	87	3.59	1.12	16.1	51.7
6. To attract investment.	87	3.47	0.93	16.1	52.9
7. Peer pressure from companies in the same industry.	87	3.39	1.03	17.2	50.6
8. As an acceptance of a change in society's ethics.	86	3.30	1.02	25.6	58.2
9. As a form of political lobbying.	85	3.25	0.90	17.6	33.0
10. To meet the demand for environmental information.	87	3.23	1.06	26.4	49.4
11. To acknowledge social responsibility.	86	3.16	1.08	24.4	38.4
12. As a result of company ethics.	86	3.05	1.09	36.0	44.2
13. Others:					
(i) They do it for profit alone.					
(ii) Legitimation of company and corporate system to empower internal groups.					

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 5-point scale where 1 = Strongly Disagree, 3 = Neutral, and 5 = Strongly Agree. P: 1, 2 represents the percentage rating for the combined frequency of response for 1 (Strongly Disagree) and 2. P: 4, 5 represents the percentage rating for the combined frequency of response for 4 and 5 (Strongly Agree).

The factors may be interpreted as follows: the primary motives (factor (iv)) refer to all companies which disclose environmental information on a voluntary basis, with a combination of the remaining factors present for each company. For example, IBM's motives for disclosure could be factors (i), (ii) and (iv), as its framework is intended to create pressure for other companies in the information technology sector to disclose, thereby creating factor (iii) for other companies. A further example of this is Rank Xerox (see ENDS Report, October, 1996) who seem to use a combination of factors (i) and (ii). A clear example of factor (ii) can be seen in the textile recycling company Evergreen (see ENDS Report, April, 1995).



**Table 7.19: Factor Matrix: Varimax Orthogonal Rotation  
Suggested Motives For Corporate Environmental Disclosure**

	Factor			
	1	2	3	4
1. To improve the company's corporate image.				0.7903
2. To market the company.		0.9257		
3. To market company products.		0.8789		
4. Pressure from customers / consumers.	0.3892			
5. To comply with regulations.			0.8550	
6. To attract investment.				0.7443
7. Peer pressure from companies in the same industry.			0.7383	
8. As an acceptance of a change in society's ethics.	0.7758			
9. As a form of political lobbying.				0.5274
10. To meet the demand for environmental information.	0.6434			
11. To acknowledge social responsibility.	0.8496			
12. As a result of company ethics.	0.8289			
Cumulative Percentage of Variance Explained	25.0	40.7	54.7	64.1

Only the largest factor loadings are shown for each variable.

In summary, the descriptive results indicated that the interested party group perceives the main motivation for companies voluntarily disclosing environmental information as improving their image. This adds support to evidence from the normative group's responses (see section 6.3.3(vi)) which attributed primary importance to the public relations motive. To a certain extent, the perceptions of these two respondent groups are a reflection of a reality. The factor analysis would seem to suggest (factor (i)) that ethical motives are not major reasons for disclosure. However, the importance of voluntary disclosure is seen in the primary motives (factor (iv)). No doubt, voluntary environmental disclosure is important to the corporate image of IBM and Body Shop.

## **(vii) Possible Reasons For the Inadequacy of Corporate Environmental Disclosure**

Regarding possible explanations for the current inadequacy of corporate environmental disclosure (see section 3.4(xii)) the descriptive statistics (see table 7.20) for the interested party respondents showed that reluctance to report sensitive information (proposition (1); mean = 4.23) received the highest mean average score. Of the respondents, 83.7% recorded a score of 4 or 5, whereas only 4.7% reported a score of 1 or 2. No legal obligation for companies to report environmentally (proposition (2); mean = 4.12) and that of possible damage to companies' reputation (proposition (3); mean = 4.06) are also perceived as important. Of much less importance to the respondents were the motives that companies generally believe they do not have an impact on the environment (proposition (11); mean = 2.78) and that users may not understand the information (proposition (12); mean = 2.77). Reluctance to report sensitive information received significantly higher scores than all the other proposed reasons, whereas the notion that companies believe they do not have an impact on the environment and that users may not understand the information are considered less important reasons for non-disclosure (see appendix E, table 16).

The results from a factor analysis (see table 7.21) showed that the interested party group's views fell under four major attitude factors. These were:

- (i) preference for secrecy rather than competitive advantage (propositions (1), (3), (4), (6) and (10));
- (ii) environmental myopia (propositions (5) and (8));
- (iii) environmental disclosure is not decision useful (propositions (9) and (11), and;
- (iv) no environmental accountability (propositions (2), (7) and (12)).

**Table 7.20: Descriptive Statistics**  
**Possible Reasons For the Inadequacy of Corporate Environmental Disclosure**

	N	Mean	S.D.	P: 1, 2	P: 4, 5
1. Reluctance to report sensitive information.	86	4.23	0.88	4.7	83.7
2. There is no legal obligation for companies to report environmentally.	87	4.12	1.03	6.9	73.5
3. Possible damage to companies' reputation.	87	4.06	0.81	2.3	74.7
4. To avoid providing incriminating information to regulators.	88	3.83	1.12	15.9	67.1
5. General lack of awareness of environmental issues	88	3.80	1.05	12.5	71.6
6. To avoid providing information to competitors.	86	3.73	0.99	8.1	61.7
7. Cost of disclosure.	89	3.72	0.99	9.0	61.8
8. Inability to gather the information.	88	3.48	1.11	18.2	55.6
9. Insufficient response / feedback from stakeholders.	87	3.40	0.87	8.0	37.9
10. Lack of awareness of competitive advantage.	86	3.19	1.04	2.1	41.9
11. Companies generally believe they do not have an impact on the environment.	87	2.78	1.21	44.8	29.9
12. Users may not understand the information.	88	2.77	1.06	33.0	18.2
13. Others:					
(i) Laziness.					
(ii) Re: "To avoid providing information to competitors". This is only used as an excuse to avoid informing the public of the dangerous process/products/chemicals they are using.					
(iii) Users may misrepresent the information.					

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 5-point scale where 1 = Strongly Disagree, 3 = Neutral, and 5 = Strongly Agree. P: 1, 2 represents the percentage rating for the combined frequency of response for 1 (Strongly Disagree) and 2. P: 4, 5 represents the percentage rating for the combined frequency of response for 4 and 5 (Strongly Agree).

The factor analysis has brought to light the main obstacles to corporate environmental disclosure. Each needs to be overcome. Legislation followed by education would seem to be the most expedient route. Even with legislation, the problem of secrecy is difficult to overcome (see ENDS Report, March, 1996b).

**Table 7.21: Factor Matrix: Varimax Orthogonal Rotation  
Possible Reasons for the Inadequacy of Corporate Environmental Disclosure**

	Factor			
	1	2	3	4
1. Reluctance to report sensitive information.	0.6345			
2. There is no legal obligation for companies to report environmentally.				0.4928
3. Possible damage to companies' reputation.	0.8865			
4. To avoid providing incriminating information to regulators.	0.8700			
5. General lack of awareness of environmental issues		0.7404		
6. To avoid providing information to competitors.	0.5183			
7. Cost of disclosure.				0.7581
8. Inability to gather the information.		0.6286		
9. Insufficient response / feedback from stakeholders.			0.7454	
10. Lack of awareness of competitive advantage.	0.7643			
11. Companies generally believe they do not have an impact on the environment.			0.6959	
12. Users may not understand the information.				0.6319
Cumulative Percentage of Variance Explained	22.8	41.7	54.0	63.7

Only the largest factor loadings are shown for each variable.

To summarise, the findings show that the main reasons for non-disclosure, according to the perceptions of reality of the interested party group, are reluctance to report sensitive information, no legal obligation, and damage to companies' reputation. It is notable that from the normative group's perspective, reluctance to report sensitive information also received significantly more attention than the other proposed reasons. It is possible that the reasons which are considered more important, for the non-disclosure of corporate environmental information, were also cited in the late 19th and early 20th centuries, in lobbying against corporate financial disclosure. Although education would go a long way

towards changing these attitudes, it would take several generations. Rapid progression can only be made through education, accompanied by legislation.

### **(viii) Interested Party Access to Corporate Environmental Disclosure**

In relation to interested party access (see section 3.4(x)), the descriptive statistics (table 7.22) revealed that interested party access to environmental corporate disclosure is most appropriate from company head office (proposition (1); mean = 4.12). Of the respondents, 74.2% recorded a score of 4 or 5 whereas only 7.1% reported a score of 1 or 2. Of lesser importance to the respondents was access to environmental disclosure only at site/branch level (proposition (4); mean = 2.10). Of the respondents to this proposition, 61.3% reported a score of 1 or 2 whereas only 7.5% reported a score of 4 or 5. Access at site/branch level received consistently lower scores than the other three proposed access locations (appendix E, table 17).

The findings indicate that, the more places disclosure is available, the better. There is also support for a central reference place, such as Companies' House. These findings conform with the normative group's responses, clearly emphasising agreement with present practice. Interestingly enough, the Confederation of British Industry does keep copies of all environmental reports published by its members, yet members of the public are not allowed to view them at its offices.

**Table 7.22: Descriptive Statistics  
Interested Party Access to Corporate Environmental Disclosure**

	N	Mean	S.D.	P: 1, 2	P: 4, 5
1. From company head office.	85	4.12	1.03	7.1	74.2
2. From a central reference place where all company environmental disclosure can be examined.	85	4.04	1.04	5.9	70.6
3. From company head office and at site / branch level.	84	3.74	1.00	6.0	60.7
4. Only at site / branch level.	80	2.10	1.06	61.3	7.5
5. Others:					
(i) Central Government, regional offices, local authorities (where appropriate).					
(ii) Don't care.					

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 5-point scale where 1 = Strongly Disagree, 3 = Neutral, and 5 = Strongly Agree. P: 1, 2 represents the percentage rating for the combined frequency of response for 1 (Strongly Disagree) and 2. P: 4, 5 represents the percentage rating for the combined frequency of response for 4 and 5 (Strongly Agree).

### **(ix) Accountability, Decision-Making and Corporate Environmental Disclosure**

The descriptive statistics (table 7.23) concerning accountability, decision-making and corporate environmental disclosure (see section 3.4(xi)) showed that the statement, "environmental disclosure that has been analysed being more useful for accountability and decision-making purposes than raw data", (proposition (1); mean = 3.99) received the highest mean average score. The proposition which received the lowest mean average score was that "it would be useful for accountability and decision-making purposes if companies disclose environmental target-setting information with respect to a set classification", (proposition (4); mean = 3.79). Of the respondents to all propositions, over 60% recorded a score of 4 or 5 for each of the four propositions, whereas 12.5% or less reported a score of 1 or 2. This shows the overall importance of all the four proposed statements. No significant statistics appeared from the Wilcoxon tests indicating that the respondents could not discriminate between the statements.

**Table 7.23: Descriptive Statistics  
Accountability, Decision-Making and Corporate Environmental Disclosure**

	<b>N</b>	<b>Mean</b>	<b>S.D.</b>	<b>P: 1, 2</b>	<b>P: 4, 5</b>
1. Environmental disclosure that has been analysed would be more useful for accountability and decision-making purposes than raw data.	86	3.99	0.95	5.8	80.3
2. Company environmental disclosure should be regulated in the same way as accounting disclosure.	88	3.99	1.14	12.5	77.3
3. Interested parties require company environmental disclosure for accountability and decision-making purposes.	87	3.98	0.88	4.6	77.0
4. It would be useful for accountability and decision-making purposes if companies disclosed environmental target-setting information with respect to a set classification.	85	3.79	0.90	5.9	62.3

The summary statistics relate to the scores obtained where respondents were asked to record a score on a 5-point scale where 1 = Strongly Disagree, 3 = Neutral, and 5 = Strongly Agree. P: 1, 2 represents the percentage rating for the combined frequency of response for 1 (Strongly Disagree) and 2. P: 4, 5 represents the percentage rating for the combined frequency of response for 4 and 5 (Strongly Agree).

In summary, all the statements were perceived as important and thus represent a feasible direction for developing the objectives of a conceptual framework for corporate environmental reporting. Also of interest, particularly to the accounting fraternity, is that not only do the results confirm a relationship between the objectives of financial and environmental reporting, but they reveal a relationship between the way in which accounting is regulated, and the way environmental reporting should be regulated.

#### **7.2.4 Further Points**

Further points can be seen in table 7.24. Comment (viii) is very relevant to a conceptual framework in corporate environmental reporting, as it is suggesting examination of two key areas. Comment (ii) on the "human aspect" suggests an accountability perspective for corporate environmental reporting. Comment (xii) suggests that government may

**Table 7.24: Further Points**

<b>Comments</b>	
(i)	My answers are essentially framed from a risk management viewpoint. For the purposes of establishing risk in a lending proposal, financial, quantitative and qualitative information is presently of roughly equal value. Perhaps as environmental reporting becomes more widespread, the different users of the information will place greater value on one specific area of reporting.
(ii)	This may not be directly relevant to your project, but please bear in mind that ethical investors are concerned about the impact of company policy on environment and people, communities. The earlier environmental funds have had to introduce ethical criteria to satisfy clients. The Cadbury code, the new Royal Society of Arts report on Tomorrow's Company suggests that we must also address the human aspect.
(iii)	By its nature, this is a broad brush approach and different companies have different needs, e.g. a chemical company versus a chain of clothes shops. Thus it is very tempting to answer "sometimes" to many of the above questions, particularly as my company is an institutional investor.
(iv)	Unfortunately, we do not have the resources to undertake independent surveys of companies' ethical/environmental issues. However, we do support and subscribe to numerous ethical/environmental research companies who undertake research. I therefore feel that this questionnaire has little relevance to my organisation, as we essentially buy in "our information" from third party organisations.
(v)	I am sceptical that any company would voluntarily supply the kind of information that would help interested parties like us in their efforts to create a public awareness of the changes in economic structures needed for social justice and sustainable development. All companies should provide information under specific indicators backed by legislation which includes consideration of ethics, life cycle analysis, energy and resource use and its environmental impact (locally and globally). Generally, sustainable development is incompatible with economic growth.
(vi)	The US has an excellent system of integrated pollution control. I attended an OECD conference recently and the industries of Europe are terrified the information will be used by communities to sue for damages to health etc. They are looking for some kind of crown immunity if they release information. Industry has to be accountable for the damage it causes in pursuit of profit.
(vii)	Legal compliance and industry average are frequently designed to be financial loopholes and are not effective for environmental protection in the UK at this time (1995). The larger problem is that companies will only produce the required data when well and truly pushed. Without a freedom of information act and with quangos/agencies suffering progressive regulatory capture, things will continue to be unsatisfactory.
(viii)	Examination of audience and reasons for disclosure.
(ix)	Companies operating in different sectors have different eco profiles and the requirements of environmental reporting will be correspondingly different.
(x)	These questions are so condensed and full of jargon that I do not really know whether I have given correct answers. I truly understood question 13. I therefore do not know whether more issues should be included. It would have helped if I had known what environmental information you were talking about and what relationship it bore to accounting and finance.
(xi)	I have tried to answer the questions in a way which indicates the issues I think are important in principle.
(xii)	Measurement of gross domestic product to take account of use of non-renewable resources is being considered. To do this, it will be necessary for companies to provide information.



require corporate environmental information creating another need for disclosure. Comments (v), (vi) and (vii) all suggest that a voluntary framework may be inadequate and that mandatory disclosure is the only way forward. If this view were held widely in influential circles then company management may well need to adopt a structure such as a conceptual framework to avoid mandatory disclosure. Comments (iii) and (ix) repeat the point made by the normative respondents that different industries have different profiles and that these would have to be taken into account in any reporting framework. Comment (x) suggests that the respondent had some difficulty with the questionnaire.

### **7.3 Conclusion**

Overall, the findings indicate that the interested party respondents would find a "compliance with standards report" useful. This is supported by the positive results where compliance with legislation is suggested. The evidence also suggests that disclosure on a financial, quantitative, and/or qualitative basis, for a variety of items, would be useful. There is also support for a comprehensive framework for environmental and financial reporting, with agreement on elements, qualitative characteristics, and objectives. Finally, there is a visible degree of consensus between the views expressed by the normative group (in chapter six) and those of the interested party group, allowing the completion of the second stage of a conceptual framework for corporate environmental reporting.