

CHAPTER 2

REVIEW OF THE RELATED LITERATURE

2.1 INTRODUCTION

In this chapter literature related to the theoretical foundation of environmental reporting, the stakeholders interested in environmental reporting, and costs and benefits of environmental responsibility is reviewed. Findings of studies examining the relationship between environmental performance and financial performance are discussed.

2.2 THEORETICAL FOUNDATION OF ENVIRONMENTAL REPORTING

The following definition is presented in *The basic postulates of accounting, Accounting research study no 1 (1961)* (Zeff 1982: 23):

“The function of accounting is:

- to measure the resources held by specific entities;
- to reflect the claims against and the interests in those entities;
- to measure the changes in those resources, claims and interests;
- to assign the changes to specifiable periods of time; and
- to express the foregoing in terms of money as a common denominator.”

The above definition is compatible with the following definition provided by the committee on terminology of the American Institute of Certified Public Accountants in 1953 (Belkaoui & Jones 1996: 29):

“Accounting is the art of recording, classifying, and summarizing, in a significant manner and in terms of money, transactions and events which

are, in part at least, of a financial character, and interpreting the results thereof.”

Financial statements are the product of accounting. The objective of financial statements is to provide information about the financial position, performance and changes in financial position of an enterprise that is useful to a wide range of users in making economic decisions (SAICA 1990: par. 12).

Financial statements also show the results of the stewardship of management, or the accountability of management for the resources entrusted to it. Those users who wish to assess the stewardship or accountability of management do so in order that they may make economic decisions; these decisions may include, for example, whether to hold or sell their investment in the enterprise or whether to reappoint or replace the management. (SAICA 1990: par 14.)

Rubenstein (1992: 33) states that companies routinely account for complex estimates of pension liabilities, oil reserves and actuarial valuations, therefore he maintains that basic accounting concepts can be modified to reflect the unique interests of environmental stakeholders. He believes accounting should be redefined as follows:

“Accounting measures the resources consumed producing goods and services for trade and for promoting public welfare, as well as the resources preserved, and wealth created for future use, in accordance with conventions mutually agreed upon by both the stewards of these resources and the stakeholders to whom they are accountable.”

According to Buhr (1994: 37) the boundaries of accounting are being pushed and challenged. The role of accounting is seen to be more than financial disclosure limited to dollar values presented in the financial statements. How much more has not yet been well defined. There is also a clear need articulated for accounting to adapt to meet society’s changing needs. Because accounting serves society, it must change as society changes.

Society is beginning to demand and expect financial information on a corporation's environmental performance just as society has demanded and come to expect cash flow information, future oriented financial information and (in its day) current value information (Buhr 1994: 30).

Financial performance and environmental performance are not two separate phenomena. Rather, they are inextricably linked. Expenditure on pollution prevention or clean-up impacts on financial performance. Process improvements instituted to improve environmental performance can also affect financial performance. Better waste management affects financial performance. Failure to comply with legislation can affect financial performance. Therefore, aside from any socially desirable reasons for being seen to be environmentally responsible, there is a need for the corporation to disclose information on environmental performance, at least as to how it affects financial performance. (Buhr 1994: 31.)

Gray (1993: 305) agrees with the 1992 EC plan, *Towards sustainability*, that it will be necessary to redefine "accounting concepts, rules, conventions and methodology" in order to permit accounting "to internalize all external environmental costs". However, genuinely environmentally sensitive business and environmentally sensitive accounting will require far more fundamental changes. The very framework of conventional accounting will have to be rebuilt from scratch. He hopes to see three phases of development in accounting thought and accounting practice:

- Development which clearly falls within conventional accounting;
- following from the above, the evolutionary process – within which accounting begins to recognize environmental considerations – that will produce changes in the accounting itself; and
- new developments because conventional accounting cannot really be fully responsive to the change in culture that comes with greater environmental sensitivity.

The concept of environmental accounting with its numerous complexities is leading to a revolution in the accounting field. It has resulted in close scrutiny of

the precision with which assets and liabilities are defined, generated questions as to for whom financial statements are produced and is leading to an expansion of the accounting profession's traditional duties. (Allen 1994: 53.)

The annual report has traditionally been the means to satisfy accountability relationships with investors and creditors. It is also the key document used to satisfy a broad range of stakeholders. However, there are other communication vehicles which the corporation uses to convey messages to its stakeholders. Most notably is the recent use of an "environmental report". (Buhr 1994: 23.)

According to the US Census Bureau US manufacturers spend as much as 0.9 percent of sales on pollution abatement and control, with that figure rising steadily. The size and upward trend in environmental costs has led to a push for better environmental accounting. Environmental accounting refers to a set of practices within firms that leads to a better understanding and management of environmental issues and their associated costs. According to the World Resources Institute's 1995 report, Green Ledgers, which examined several case studies in the chemical and other related industries, firms can learn more about their own costs and identify opportunities to improve environmental and economic performance by implementing these practices. (Quellette 1996: SR 16)

Ranganathan and Ditz (1996: 39) of the World Resources Institute stress that environmental accounting need not require a major overhaul of existing accounting and information systems. Conducting a pilot project is often a good way to begin. To be successful, a pilot project needs the support of people across the organization, with accountants being instrumental. As environmental costs are pooled in overheads and later allocated, crucial links are lost between environmental costs and the responsible products, processes and underlying activities (Ranganathan & Ditz 1996: 38).

2.3 STAKEHOLDERS INTERESTED IN ENVIRONMENTAL REPORTING

Stakeholders are defined as any entity, group or individual that has the power to impact the corporation. Some examples of stakeholders include employees, suppliers, customers, stockholders, bondholders and other lenders, the public and the global community. (Allen 1994: 124.)

Van Niekerk (1998: 24 – 25) identified investors and stock exchanges; lenders, suppliers, trade creditors and credit bureaus; governments and their agencies; the public; customers and trade associations; as well as employees and their representatives as stakeholders. She identified these stakeholders by using the categories identified by AC 000, *Framework for the preparation and presentation of financial statements*, and those identified by the American Accounting Association (1973). The categories identified by the American Accounting Association correspond to those identified by AC 000, except for stock exchanges and representatives of stakeholders (Van Niekerk 1998: 20).

According to Aspinwall & Company with the assistance of the Association of Chartered Certified Accountants (1997: 5 – 6) an individual company may be able to define several stakeholder groups with an interest in its environmental performance e.g.:

- Employees
- Regulators and policy-makers
- Opinion-formers, including journalists, academics and environmental pressure groups
- Local communities
- Customers
- Suppliers and other business partners
- Shareholders, investors and insurers.

AC 000 identifies the following users of financial statements:

- Investors
- Employees
- Lenders
- Suppliers and other trade creditors
- Customers
- Governments and their agencies
- Public

(SAICA 1990: par. 9).

When comparing the stakeholders listed by Allen, Aspinwall & Company and AC 000 above employees, suppliers and customers are identified directly by all of them. (Van Niekerk used AC 000 to identify stakeholders; therefore no reference is made here to the stakeholders she identified.) AC 000 identifies the public as another stakeholder, while Allen refers to the public and the global community. Aspinwall & Company specifically identifies stakeholders with an interest in environmental performance and breaks the broad term of public or society down into opinion-formers, including journalists, academics and environmental pressure groups, while referring to local communities separately. AC 000 identifies governments and their agencies, while Aspinwall and Company identifies regulators and policy-makers which correspond to governments and their agencies. AC 000 identifies investors and lenders as separate stakeholders. Allen combines stockholders, bondholders, and other lenders as one group, while Aspinwall & Company combines shareholders, investors and insurers as one group.

The above-mentioned comparison of stakeholders can be illustrated as follows:

<i>Stakeholder</i>	<i>AC 000</i>	<i>Aspinwall & Co</i>	<i>Allen</i>
Investors	√	√	√
Employees	√	√	√
Lenders	√		√
Suppliers/trade creditors	√	√	√
Customers	√	√	√
Governments	√	√	
Public/society	√	√	√
Insurers		√	
Local communities		√	

AC 000 is based on the international framework of which the main purpose is to assist with the development of future international accounting standards and the review of existing international accounting standards (SAICA 1990: par. 1). This international framework is widely accepted by accounting organizations. Although Van Niekerk (1998: 21 – 24) used the stakeholders identified by AC 000 she also referred to studies relating to users of social information in company financial statements. She did not adapt the stakeholders identified by AC 000 with the stakeholders identified by these studies. However, it should be noted that these studies mainly divided “public” into various groups. The stakeholders identified by AC 000 are therefore included as stakeholders for the purposes of this study.

However, to facilitate a meaningful discussion of stakeholders interested in environmental reporting, the stakeholders identified by AC 000 are not presented in the same order as in AC 000 while local communities, insurers, as well as accountants and auditors are added as stakeholders. Van Niekerk (1998: 23) specifically noted the importance researchers assigned to community stakeholder groups — several of them emphasized local communities from an environmental

point of view. Aspinwall & Company (1997: 5 – 6) identified local communities and insurers as stakeholders with an interest in a company's environmental performance in their recent Guide to Environment and Energy Reporting and Accounting. Environmental claims relating to pollution clean-up and asbestos hit the global insurance industry hard, and climate change represents the next threat (refer to section 2.3.7). Insurers are therefore definitely interested in their clients' environmental performance and are identified as stakeholders. Accountants and auditors are identified as a separate stakeholder group due to the "demand from all players in financial markets to put a price on the environmental risks faced by companies" (Schmidheiny & Zorraquin 1996: 131). The accounting profession is reacting to this demand (refer to section 2.3.8).

De Villiers (1998: 163) found that users of financial statements are in many cases more positive about more comprehensive environmental corporate reporting than the preparers and the auditors of these statements. He identified chartered accountants, stockbrokers, banks and assurance companies as users (according to accountability theory) for the purposes of his study. His choice of these stakeholders lends support to the inclusion of insurers as well as accountants and auditors as stakeholders.

Considering the above-mentioned the following stakeholders were identified as interested in environmental reporting:

- Society
- Governments and their agencies
- Local communities
- Customers
- Suppliers and other trading partners
- Employees
- Investors, lenders and insurers
- Accountants and auditors.

2.3.1 Society

Over time, activities that are merely socially desired become required as social expectations are entrenched in law, government regulations and cultural norms. New social expectations arise and new activities are seen as being socially desirable. Because of the existence of the implicit social contract, the corporation becomes accountable to one degree or another, to society. (Buhr 1994: 21 – 22.)

Society is placing increasing emphasis on the importance of the environment and managing the environment in a more responsible manner (Dunlap & Scarce 1991). The United Nations held a conference on environment and development during 1992 where the Business Council for Sustainable Development (BCSD) presented a global business perspective on sustainable development. The title of their report *Changing course* was chosen with some care. “While the basic goal of business must remain economic growth, as long as world population continues to grow rapidly and mass poverty remains widespread, we are recommending a different course toward that goal. There will be changes in direction and changes in the measurements of progress to include indicators of quality as well as quantity. Business is a large vessel; it will require great common effort and planning to overcome the inertia of the present destructive course, and to create a new momentum toward sustainable development.” (Schmidheiny 1992: xxii.)

In a personal note to the preface of *Changing course* the chairman of the BCSD, Stephan Schmidheiny (1992: xxiii) says that he finds the combination of business and environment concerns appropriate. Conservation of the environment and successful business development should be opposite sides of the same coin – the coin being the measure of the progress of human civilization. The degree to which these two halves can be joined in the world of human activity, and the speed of this process, will determine the rate at which sustainable development will turn from a vision into reality.

Sustainable development refers to one generation enabling the next generation to be as potentially well-off from both a natural resource and economic perspective.

The new social contract between business and society reflects the idea that business, whose existence is the result of society's consent, owes something more to society than pure economic development. Both of these still-evolving concepts result from years of legislation, regulation, judicial interpretation, ethical considerations, and international scrutiny that attempt to bridge the generations and the nations of the world. (Allen 1994: 6 – 7.)

The World Business Council for Sustainable Development (WBCSD) was formed in January 1995 through a merger between the BCSD in Geneva and the World Industry Council for the Environment in Paris – the two organizations that led the business response to the challenges arising from the UN conference on environment and development in Rio in 1992. The WBCSD plays an important role in developing closer cooperation between business, government, and others, and in encouraging high standards of environmental and resource management in business itself. Its mission is to provide business leadership as a catalyst for change toward sustainable development, and to promote eco-efficiency in business. (Schmidheiny & Zorraquin 1996: xv.) ESKOM is the only South African company that is a member of the WBCSD.

Internalizing environmental costs, greater use of economic instruments, new national accounts, new bases of taxation, new attention to financial markets by “the greens” are clearly the direction society is moving in . The more forward-looking firms are investing in eco-efficiency, and then joining groups calling for more economic instruments and the internalizing of environmental costs so that their investments will pay off sooner in financial terms. Change will, as always in major societal shifts, accelerate and decelerate and will occur faster in some places and some business sectors than in others. But businesses that do not keep up with such changes will suffer. (Schmidheiny & Zorraquin 1996: 27 – 28.)

A combination of increased public awareness of environmental issues and freedom of access to information on the environmental performance of companies will serve to magnify media and pressure group interest in the environmental performance of industry. In order to manage media and pressure group attention,

companies must be able to state that they have made efforts to reduce their environmental impact. Claims which cannot be substantiated are likely to be seized upon and will be very detrimental to a company's public image. Companies which seek to communicate responsible environmental performance must base any claims that they make to this effect on hard facts which they are willing to communicate. (Welford & Gouldson 1993: 10.)

At one time, the mere fact that a company had a structured environmental management system that carried out the corporate environmental policy and provided information to top management was enough to satisfy outsiders of a company's environmental soundness. But now the public wants more. So environmental managers have been charged with two related communication activities: conforming to independent environmental standards and reporting publicly on environmental performance. (Schmidheiny & Zorraquin 1996: 149.)

Aspinwall & Company (1997: 6) provided the following generic expectations that opinion-formers, including journalists, academics and environmental pressure groups may have regarding environmental reporting. The report should:

- Provide objective disclosure without a public relations slant;
- show evidence of top level commitment;
- provide details of investment and expenditure on environmental improvement;
- provide inventories of discharges and emissions;
- demonstrate quantified targets; and
- show a commitment to sustainability.

2.3.2 Governments and their agencies

Even if a corporation does not embrace the concepts of sustainable development, it must as a minimum comply with environmental laws. Greening social conscience and changing social expectations have been translated into more stringent environmental laws. For example, current environmental legislation has provisions which include the imprisonment of executive officers for the violation of

environmental laws. By September 1992, there had been five jail terms imposed in Canada – the longest being eight months. (Buhr 1994: 27.)

The Resource Conservation and Recovery Act and The Comprehensive Environmental Response, Compensation and Liability Act (also known as Superfund) are United States acts that are often mentioned in the literature.

The Resource Conservation and Recovery Act of 1976, amended in 1986, authorized the Environmental Protection Agency (EPA) to define hazardous materials and to manage their manufacture, handling, transportation and disposal. The goal is to reduce or eliminate hazardous waste. Non-compliance can result in both civil and criminal penalties with the act imposing prison sentences of up to 15 years and fines up to \$250 000. (Allen 1994: 9.)

The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA or Superfund) of 1980 deals with the actual clean-up of already polluted sites. To fund the program, taxes were imposed upon those corporations importing or producing petrochemical or other toxic chemicals. Additionally, Congress authorized a \$1,6 billion trust fund from whence the bill received its Superfund nickname. After clean-up, the EPA is authorized to charge any “potentially responsible parties” (PRP’s) for the cost. PRP’s include:

- Any polluting present or previous owner of a facility identified as a hazardous site;
- any non-polluting present or previous owner of a facility identified as a hazardous site;
- any generator or transporter of hazardous waste.

(Allen 1994: 9 – 10.)

The position regarding environmental legislation in South Africa was summarized by Masson (1993: 15), environmental affairs manager of Consol Ltd, as follows:

“Those of you who are active in the pollution control field will appreciate how many acts there are which have a bearing on pollution control. Needless to say there are several departments involved, some of which promulgate legislation but don't enforce it (Environment Affairs); sections of some acts (Water Act 54 of 1956) are enforced by one department's sub-directorate and other sections by other sub-directorates. Most acts make provision for the delegation of powers to local authorities (Health Act 63 of 1977), some of which have exercised this provision and others which have not (Environment Conservation Act 73 of 1989). The Water Act 54 of 1956 has been amended many times and the Hazardous Substances Act 15 of 1973 lists hazardous substances intended to be relevant to pesticides but which many other industries also use. Tracing legislation and promulgated regulations related to the acts is an ordeal in itself.”

In the White Paper on the Conservation and Sustainable Use of South Africa's Biological Diversity (RSA 1997: 93) the government recognizes the following limitations of existing legislation:

Fragmentation

There is an extremely high degree of fragmentation, with legislation being spread across many different departments, at both national and provincial levels. Exacerbating the problem is the lack of national norms and standards from which legislation can be harmonized.

Conflict of interest

Legislation is often conflicting, a problem heightened by the fact that a number of the government departments responsible for enforcing compliance with environmental regulations are also charged with promoting the activities that they are supposed to regulate.

Ineffective enforcement

Although a substantial amount of environmental legislation is in place in South Africa, poor enforcement renders much of it ineffectual. Compounding the problem are the often inappropriate penalties imposed for infringing legislation, and the lack of capacity within government agencies to monitor infringements.

According to the above-mentioned White Paper (RSA 1997: 95), the government will undertake the following actions:

- As part of the legislative and institutional audit that will be undertaken to implement the general national environmental policy, an investigation will also be performed of the efficacy of existing and proposed biodiversity-related legislation. Such an investigation will lead either to the development of new legislation or the amendment of existing legislation, and will indicate institutional changes required.
- Following this audit, framework biodiversity legislation will be developed and implemented. It is envisaged that such legislation will rationalize and harmonize existing legislation, will articulate national norms and standards, and will embrace the holistic approach towards biodiversity that is currently absent in the law. The participation of both the national and provincial spheres of government will be ensured in this process so that the result is in keeping with the concurrent responsibilities held by these levels of government. This will further lead to the development or amendment of provincial legislation as appropriate. The purpose of the framework legislation described would largely be to give effect to the goals concerning the conservation and sustainable use of biodiversity.

The National Water Act 36 of 1998 has repealed and replaced a multitude of water laws. Existing laws dealing with water allocation and control were outdated and the development of our society demanded that management of our natural resources be re-examined taking cognisance of social, economic and environmental factors. The purpose of the National Water Act includes promoting

efficient and sustainable use of water in the public interest as well as facilitating social and economic development. (Stein 1998.)

The National Water Act (RSA 1998) deals with the prevention of pollution of water resources due to activities on land, in part 4 (section 19) of the Act. The person who owns, controls, occupies or uses the land in question is responsible for taking steps to prevent pollution of water resources. If these steps are not taken, the relevant catchment-area management agency may take steps to prevent pollution or to remedy the results thereof, and to recover all reasonable expenditure from the persons responsible for the pollution. In part 5 (section 20) of the Act pollution of water resources as a result of an emergency, for example an accident causing the spill of a dangerous substance, is dealt with. The responsibility for the remedy of the situation is on the person responsible for the incident or on the person responsible for the relevant substance. If the responsible persons fail to act the relevant catchment-area management agency may take the necessary steps to recover the expenditure from each responsible person.

Sections 19 and 20 is a clear application of the polluter pays principle as discussed above under the Superfund Act of the United States. Section 151 of the Act (RSA 1998) includes not complying with sections 19 or 20 as a criminal offence. The first conviction is punishable with a fine and/or imprisonment of a period not exceeding five years, and the second or further convictions with a fine and/or imprisonment of a period not exceeding ten years.

With regard to environmental problems South Africa previously relied on systems based on the command-and-control approach. This approach has seldom provided cost effective and efficient solutions. There is now a need for a system which relies more on economic incentives than regulatory supervision and which is self-funding. South Africa's legal and policy framework is now suitable for the introduction of polluter-pays-principle systems. Pollution or emission charges have been widely used internationally and have proven to be successful. The South African water management sector refers to waste water charges. (Clement, Forster, Taviv & Herold 1998: 2; 21.)

Historically the position of the mining sector has been a favoured one according to Dixon (1998: 2). The government was supportive of mining as it contributed so enormously to the gross domestic product. To entrench the position, safeguards were built into the prevailing legislation to ensure that mining would not be restricted by conflicting interests. Land required for prospecting and mining was specifically excluded from the ambit of the Physical Planning Act of 1967. Under the Environment Conservation Act, regulations that identified waste excluded mining waste. The old Water Act of 1956 placed water required for mining purposes on proclaimed land in a superior position to other water uses on that land. The National Water Act 36 of 1998 makes it clear that water required for industrial purposes will only be available if the demands of the ecological reserve and basic human needs have been met. The mining sector are now required to compete on an equal legal footing with other interests when it comes to demands placed on the use of the country's water, land or mineral resources. This has led to a levelling of the playing field. (Dixon 1998: 2 – 3.)

The 1993 Constitution of the Republic of South Africa Act (RSA 1993: s.29) provides that “every person shall have the right to an environment which is not detrimental to his or her health or well-being”. The 1996 Constitution of the Republic of South Africa Act (RSA 1996: s.24) improved as follows on the 1993 section:

“Everyone has the right to an environment that is not harmful to their health or well-being; and to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that –

- prevent pollution and ecological degradation;
- promote conservation; and
- secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.”

The Environment Conservation Act (RSA 1989) authorizes the responsible Minister to determine policy for environmental conservation and makes it incumbent upon all officials to apply the policy. A General Environmental Policy

(RSA 1994) was determined in accordance with the provisions of the Environment Conservation Act. It contains several general guidelines of which the following are important to business:

Trusteeship

Every generation has an obligation to act as a trustee of its natural environment and cultural heritage in the interest of succeeding generations.

Responsibility

The state, every person and every legal entity has a responsibility to consider all activities that may have an influence on the environment duly and to take all reasonable steps to promote the protection, maintenance and improvement of both the natural environment and the human living environment.

Sustainable development

Sustainable development is accepted as the guiding principle for environmental management. Sustainable development is only possible if natural resources are treated in a manner which would be expected from a trustee of those resources.

Land use

A planned analysis for large scale or high impact development projects is required. Such an analysis should lead to an environmental impact assessment, integrated environmental management and involve all interested and affected parties in decision making.

Internalization of externalities

Where appropriate, environmental resource economics should be used to apply measures that will internalize external environmental costs, such that they are incorporated into exploitation and production costs.

(RSA 1994: 36 – 39; Huckle 1995: 26 – 27.)

A new environmental policy was developed which was published during May 1998 in the White Paper on an Environmental Management Policy for South Africa. According to Dixon (1998: 14) the principles identified in the document are commendable and were a result of an extensive consultative process; however, the draft legislation which flowed from the White Paper is not as commendable.

The National Environmental Management Bill is intended to give effect to the White Paper on an Environmental Management Policy for South Africa. In some cases the Bill ignores processes already underway which impact on the environment, e.g. the Integrated Pollution and Waste Management Policy and the Integrated Environmental Management Process and in others does not recognize or integrate with existing legislative provisions e.g. as regards the Environment Conservation Act. It also does not reflect in some instances the provisions of the White Paper. (Dixon 1998: 15.)

The above-mentioned Bill is intended to provide a framework for integrating good environmental management into all development activities and promote certainty with regard to decision-making by state organs on matters affecting the environment. It establishes a lead co-ordinating role for the Department of Environmental Affairs and Tourism. The Bill provides for the *“best practicable environmental option” – the option that provides for the most benefit and causes the least damage to the environment as a whole – as the test for integrated environmental management.* (Dixon 1998: 15.)

Aspinwall & Company (1997: 6) provided the following generic expectations that regulators and policy-makers may have regarding environmental reporting. The report should:

- Demonstrate commitment to full compliance;
- acknowledge any past failure to comply and describe remedial action plans;
- provide reassurance about systems in place to avoid future failures; and
- show leadership in relation to proposed legislative or policy changes.

2.3.3 Local communities

Industry shares its surrounding environment with the local population. Increasingly this population is demanding a high level of environmental performance from its industrial neighbours, and seeks some degree of reassurance that they are not exposed to significant environmental risk due to a company's operations. Trends toward freedom of access to environmental information will give greater power to local communities when they question the activities of local industrial co-habitants. In order to foster a positive working relationship, companies must improve their environmental performance and communicate their efforts to the surrounding communities. (Welford & Gouldson 1993: 9.)

In a corporate governance guide SAICA (1997: 12) states that the enterprise should see itself as a resident in the broad community, and should act in a spirit of social consciousness and awareness. It should be sensitive to the needs of the local communities. Reporting environmental performance goes a long way toward building credibility in the community where a company operates (Sandborg 1993: 59).

Aspinwall & Company (1997: 6) provided the following generic expectations that local communities may have regarding environmental reporting. The report should:

- Provide information about activities at the site;
- detail who to contact for further information; and
- provide evidence of a good safety and environmental record.

2.3.4 Customers

The "green consumer" has probably been a major force on the process of organizational environmental sensitivity. Consumer boycotts and related activism have a long (and, at times, successful) history. The late 1980's in the UK saw the arrival of this new breed of consumer. The movement has certainly raised awareness, brought new products to the market and set in train effects of a far

wider influence than the recycling of toilet rolls and the phosphate-freeness of washing powders. (Gray 1993: 269.)

According to Welford & Gouldson (1993: 8) it is certain that credible claims relating to environmental performance constitute one positive element among the many characteristics upon which consumers base their purchasing decision. Companies which can validate and communicate the environmental performance of their products will enhance their competitive position. Sound environmental accountability gives a company integrity in the eyes of its consumer (Sandborg 1993: 59).

Short-term customers are the ones who buy products and services. Long-term customers are an often overlooked resource, comprised of the community at large. Companies like Monsanto are redefining their understanding of who their customer is and using this knowledge to a competitive advantage. (Denton 1994: 4 – 5.)

According to Schmidheiny & Zorraquin (1996: 62) “green consumerism” is maturing and switching from brand loyalty to company loyalty, with the general public believing it has a growing right to have a say in what companies do.

Aspinwall & Company (1997: 6 – 7) provided the following generic expectations that customers may have regarding environmental reporting. The report should:

- Demonstrate both commitment and competence;
- show that company policies aim to achieve the same high standards as those of its customer(s);
- demonstrate that future environmental requirements can be met; and
- show that the customers’ business partners have a good reputation.

2.3.5 Suppliers and other trading partners

In efforts to improve overall environmental performance, many companies are exercising their own rights both as purchasers and as vendors and are demanding

that all of the companies within their supply chain seek to minimize their own environmental impacts (Welford & Gouldson 1993: 8).

According to Huckle (1995: 32) South Africa's current and potential foreign trade partners are using environmental standards to generate trade barriers. For South African exporters this means that, in addition to normal import standards, specific environmental product restrictions or generic controls are applied. The generic controls may relate to recyclability or energy efficiency for example. Another generic control is the use of eco-labelling (labels which inform consumers that a product is environmentally more friendly relative to other products in the same category) which is becoming increasingly common in the EC countries. Packaging standards which regulate the volume, type and recyclability of packaging materials are particularly affecting products packaged in glass, aluminium or cellulose.

Aspinwall & Company (1997: 7) provided the following generic expectations that suppliers and other business partners may have regarding environmental reporting. The report should:

- Explain the company's environmental policy;
- indicate priority issues and goals; and
- provide clarity about the process for managing issues with suppliers.

2.3.6 Employees

Employees' concerns relating to the environmental performance of their employers goes beyond the impact of operations on the working and living environment. Increasingly people wish to work for ethical and responsible companies. Companies that reflect the environmental concerns of the public will find it easier to attract, retain and motivate a quality workforce. (Welford & Gouldson 1993: 9.)

There are two United States federal laws that require environmental risk reporting to employees. The Occupational Safety and Health Administration has developed a hazard communication standard to protect workers handling chemicals. It requires companies to have an active program to inform workers about hazardous

chemicals in the workplace and how to deal with them. The Superfund Amendments and Reauthorization Act and the Pollution Prevention Act require companies to gather a lot of information on hazardous chemicals. This is reported to the federal government and then incorporated into a national computerized data base. Workers and the general public have ready access to this information. (Harrison 1993: 51.)

According to Harrison (1993: 54) successfully handling the demands of the worker right-to-know and emergency planning regulations means going beyond the bare bones of the regulatory requirements to communicate with employees. It means developing training, orientation, and ongoing information programs that are accessible, readily understood, up-to-date, and interactive – responsive to changing worker needs and flexible enough to allow input from them.

Aspinwall & Company (1997: 6) provided the following generic expectations that employees may have regarding environmental reporting. The report should:

- Link performance to corporate success and job security;
- demonstrate compliance with legislation;
- demonstrate favourable performance compared with that of competitors;
- and
- show the role of employees in achieving targets.

2.3.7 Investors, lenders and insurers

The rapid growth of ethical investment schemes in recent years reflects the desire of many investors only to lend their financial support to companies which behave in a responsible manner. There are also a number of very good business reasons why investors prefer to work with companies that have a proven track record of environmental integrity. The structure of legal liability for environmental damage dictates that any party that causes environmental damage may be fined and required to bear the costs of remediating that damage and to compensate the affected parties for any associated losses. It is increasingly difficult and expensive to obtain insurance to cover such issues. Consequently, companies associated

with a significant environmental incident may suffer significant financial losses. These losses are then translated into reductions in the share price and the associated dividends. (Welford & Gouldson 1993: 10.)

Environmental claims have been called the insurance industry's black hole, with US insurers facing an estimated \$2 trillion in pollution clean-up and asbestos-related claims. These figures do not include the additional billions that have either been paid or are reserved in the European insurance markets. The problem is so immense that the solvency of this global industry is under threat. (Schmidheiny & Zorraquin 1996: 118.)

Some lawyers specialize in digging out old policies that were written without a time limit for the notification of the claims, known in industrial liability insurance circles as "long-tail", and taking the insurers to court. The industry no longer writes long-tail policies and it excludes gradual pollution from environmental impairment cover, which is both costly and difficult to get. (Schmidheiny & Zorraquin 1996: 121.)

Even as the industry's solvency is under threat from past environmental liability, another potential danger has emerged: climate change – the theory that human activities are producing a less predictable, more destructive climate. Recent apparent instability in the weather and a succession of natural catastrophes have made it more difficult for insurers to calculate risks. (Schmidheiny & Zorraquin 1996: 118.)

Superfund (refer to section 2.3.2) affected both insurers and bankers. The insurance industry's Superfund nightmare began in 1985 when a lawyer maintained that his client's General Coverage Liability policy was in effect at the time waste was dumped and required the insurers to pay his clean-up costs (Schmidheiny & Zorraquin 1996: 120). Superfund specifically exempts lenders from being classed as "owners"; but there are excepting circumstances, and several US court cases have eroded this protection. Banks' potential liabilities are caused by their either operating, owning, or participating in the management of a

contaminating business, or aiding and abetting in environmental violations. (Schmidheiny & Zorraquin 1996: 102.)

In 1992, about 30 leading banks signed a "Statement by Banks on the Environment and Sustainable Development". This said they "regard sustainable development as a fundamental aspect of sound business management" and noted that "environmental risks should be part of the normal checklist of risk assessment and management." Since then, the number of the signatories has more than doubled and continues to grow. (Schmidheiny & Zorraquin 1996: 100.)

Banks increasingly require of companies to provide environmental assessments, including an evaluation of the company's compliance with existing laws and regulations and a technical analysis of critical sites, before they will grant a loan (Cormier, Magnan & Morard 1995: 46).

Cormier *et al* (1995: 46) states that investors should be provided with information to enable them to assess the quality of a company's environmental management, since this directly affects the company's profits and cash flows. Mullin & Sissell (1996: 52) quote Stevens, manager/corporate issues at DuPont, saying that analysts are not as interested in pollution prevention and waste reduction as they are in yield improvement, sales growth, cost management, and cash and earnings generation as a result of improved environmental management strategies.

Shareholders are pressuring companies for information on their environmental performance as they recognize that environmental performance is a key indicator of overall performance and ethical behaviour. The February 1993 issue of *IRRC News for Investors*, published by the Investor Responsibility Research Center, notes fifty-seven investor initiatives to place an environmental resolution on the agenda of company annual meetings. Many of these resolutions call for disclosure of environmental information to shareholders and the public. (Sandborg 1993: 58.)

Aspinwall & Company (1997: 6) provided the following generic expectations that shareholders, investors and insurers may have regarding environmental reporting. The report should:

- Inspire confidence that they are investing in a responsible forward thinking company;
- provide an assessment of environmental liabilities and risks;
- detail information on environmental investment and costs; and
- demonstrate that the organization's pro-active approach brings benefit from environmental opportunities.

2.3.8 Accountants and auditors

Accountants and auditors are coming under increasing pressure to include environmental information in the accounts of both companies and countries. The feeling among some, both within and outside the profession, is that the social costs of trade and industry should somehow be reflected in the accounts. Externalities, such as pollution, should be internalized so that the price of a shirt, a cake, or a car reflects its impact on the environment. The pressures stem from the supposition that accountancy should put a financial value on what society treasures. (Schmidheiny & Zorraquin 1996: 132.)

Accountants rarely think of themselves as the frontline of environmental management. However, their understanding of cost accounting systems, combined with their access to managers from all parts of the business, uniquely equip them to advance the understanding of environmental costs. (Ranganathan & Ditz 1996: 38.)

Although many accountants argue that it is not their job to adequately convey environmental risks and opportunities through accounting and reporting systems, the accounting profession is showing a great deal of energy and creativity in trying to make financial accounting better reflect the sorts of environmental realities that already or may soon affect business. (Schmidheiny & Zorraquin 1996: 173.)

ED 113, *The consideration of environmental matters in the audit of financial statements*, issued August 1997, was approved for circulation by the Auditing Standards Committee of the South African Institute of Chartered Accountants (SAICA). It is intended to be a supplement to the statement of SAAS 250, *Consideration of laws and regulations in an audit of financial statements*. This exposure draft was prepared by the International Auditing Practices Committee and approved by the Council of International Federation of Accountants of which SAICA is a member.

The role of the accounting profession in interpreting market demands and supplying information wanted by markets is growing. This is especially obvious in mergers and acquisitions, where accountants – as financial advisers – are called on to verify valuations of land assets and capital equipment (which might become obsolete faster than expected when environmental regulations or market demand change). Mergers and acquisitions work by accountants is also putting the spotlight on other environmental issues that might affect the future profitability, and indeed the viability, of businesses. Another business opportunity for auditors is to help produce or audit environmental performance reports. (Schmidheiny & Zorraquin 1996: 134; 150.)

The companies that now strive to improve their eco-efficiency – and therefore possess the necessary environmental information – can only hope that accountants will be better equipped to help them communicate their progress to the markets. There is a danger that leaders do not always win, for example, early adopters of new technologies and processes might lose because the markets could take much longer than expected to recognize the benefits. (Schmidheiny & Zorraquin 1996: 135; 152.)

The majority of companies do not collect the necessary environmental data to give accountants the information environmentalists think they need, nor is the information that is collected presented in a way that accountants can use. But when companies do improve performance in this sector, accountants will have to take notice and change some of the accounting rules, if only to avoid being sued

for negligence. (Schmidheiny & Zorraquin 1996: 152.) In future society could seek redress from auditors for any failure to offer the right signals now.

2.4 COSTS AND BENEFITS OF ENVIRONMENTAL RESPONSIBILITY

2.4.1 Costs/disadvantages of environmental responsibility

An environmentally responsible firm exceeds regulatory compliance. One of the biggest risks involved with this strategy is the possibility of more efficient and/or cheaper technology being introduced after the firm undertakes a large outlay of funds for equipment. Another possibility is that regulations do not become more stringent and/or the benefits of cheaper daily operations do not exceed the outlay. Those competitors that chose only to comply (or not to comply) are now producing a product that is cheaper to manufacture. (Allen 1994: 69.)

Schmidheiny & Zorraquin (1996: 136) give an example relating to the standards applied to landfill in the United Kingdom. The waste companies that applied the strictest standards to their landfill sites because they believed government promises of enforcement have discovered instead that they are being undercut by competitors working to much lower standards and exploiting government lethargy. The high-standard operators not only suffer the impact of lower revenues, they must also service the cost of borrowing to finance the higher capital expenditure needed to meet the better standards.

2.4.2 Benefits/advantages of environmental responsibility

Managing resources well can benefit the environment, the community and the corporation. Further, better management of corporate environmental performance can improve international competitiveness. But these benefits can be achieved only if environmentally related expenditures are seen properly as corporate strategic investments and if environmental responsibility and corporate environmental strategy are integrated into the corporate culture. (Epstein 1996b: xv.) Other benefits Epstein (1996c: 22) mention are improved production yields, improved product quality, reduced operating costs and improved profitability.

Marcus (1996: 16) identified the following environmental opportunities with potential for benefiting the overall financial performance of the corporation:

- Pollution prevention
- Resource conservation
- Reducing capital project and process changes mistakes
- Eliminating accidental releases
- Eliminating fines and penalties
- Reducing site remediation reserves
- Disposing of previously unsaleable properties.

Allen (1994: 70) categorized the benefits of environmental responsibility as:

- a decrease in cost of operations;
- enhanced revenues;
- decrease in cost of capital; and
- decrease in regulatory risks.

Decrease in cost of operations

A decrease in cost of operations can be the result of a number of factors. An environmentally responsible firm may be able to decrease costs associated with employees, for example, higher morale may result and translate into a willingness to trade-off lower wages or the ability of the firm to attract higher quality workers. There could be a lower turn-over and less recruiting and basic training expenses. There is less potential for litigation of the toxic tort kind brought by an employee or employee group that may result from environmental exposure or accident. The lower costs or increased productivity associated with upper management not needing to spend time on regulatory matters should not be overlooked. (Allen 1994:70 – 71.)

Environmental inefficiency waste resources and signals process and operations inefficiencies. An example is leaking underground storage tanks which cost money and can hold up property transfers, acquisitions and divestitures.

(Sandborg 1993: 58.) On the other hand eco-efficiency seeks to minimize cost generators – such as material and energy use and toxics disposal – while enhancing durability and service, which can make a company's products more competitive in the marketplace (Anonymous 1996: 5).

The environmentally responsible company can often save money by decreasing excess packaging and by using recycled items as inputs. A major cost faced by most manufacturers is waste disposal and especially hazardous waste disposal. An environmentally responsible firm may be able to reduce these costs along with the liability associated with them. (Allen 1994: 73 – 74.)

It would seem reasonable to believe that it would cost less to prevent pollution rather than clean up after it. As in other areas, prevention pays. One of the first companies to focus on prevention instead of control was 3M. They started the cutting edge 3P (Pollution Prevention Pays) in 1975. Voluntary waste reduction has saved the company an estimated one-half billion dollars. (Denton 1994: 13.)

One chemical company that has had tremendous success at seeing waste as a resource is DuPont. DuPont notes that, just as a weed can be described as a plant out of place, waste manufacturing may be a product looking for a market. The company's approach of converting "waste" into desirable consumer products has created a thriving enterprise. The company has developed many businesses from the "waste" or by-products of other manufacturing processes as well. DuPont notes that as of 1991, had it not pursued these businesses, disposal costs alone for what was once defined incorrectly as "waste" would have exceeded a projected \$100 million each year by the turn of the century. (Denton 1994: 14 – 15.)

A total quality environmental management program can help organizations comply with increasingly stringent environmental regulations, reduce manufacturing costs by lowering the tangible cost of chemical disposal, waste treatment, and licensing and laboratory fees (Mannion 1996: 32).

Enhanced revenues

Enhanced revenues via environmental responsibility may be achieved in a number of ways. An environmentally responsible firm is able to market itself and its products to attract a growing segment of the world population which is demanding more environmentally friendly manufacturing, packaging and eventual recyclability of products. This marketing strategy can in the long-run increase volume while minimizing public relation and advertising costs. Distributors may require a risk premium for dealing with environmentally irresponsible firms as distributors may be indirectly tainted by association when negative publicity occurs to the supplying corporation. Similarly, firms supplying complementary products or services may choose to avoid taint and align themselves with environmentally responsible corporations. An environmentally responsible firm may have the ability to attract extremely competent and capable board members which conceivably could enhance the corporations image and profitability. (Allen 1994: 74 – 75..)

According to Klassen & McLaughlin (1996: 1201) manufacturers who demonstrate efforts to minimize the negative environmental impacts of their products and processes, recycle post-consumer waste, and establish environmental management systems are poised to expand their markets or displace competitors that fail to promote strong environmental performance.

Decrease in cost of capital

Another way that the environmentally responsible firm may prosper is through the reduction of its cost of capital while simultaneously increasing its accessibility to funds. Most lenders in any type of real estate transaction will perform environmental audits. An environmentally deficient firm, or a marginal firm in a high pollution industry facing new regulation, may face huge fines and/or need to make large expenditures to comply with regulation. These expenditures could eventually make the firm unprofitable or result in the firm's inability to make principal and interest payments. Thus, a more environmentally responsible firm will receive a higher credit rating. There are large institutional investors and

individuals who invest via mutual funds who prefer environmentally responsible firms. (Allen 1994: 75 – 76.)

Decrease in regulatory risks

The environmentally responsible firm is more adaptable when changes in law or enforcement takes place in the regulatory arena. New regulation will not hinder its operations, while its competitors have to bear the costs of additional regulation. This may force one or more of them out of business with the effect of increasing market share for the environmentally responsible firm while increasing cost of entry into the industry. The environmentally responsible firm need not be concerned about a finding of non-compliance resulting in fines, negative publicity, a subsequent costly public relations campaign and expensive litigation.(Allen 1994: 76 – 77.)

The potentially high cost of not complying with environmental legislation includes direct monetary losses due to fines and lost production as well as adverse market impact due to negative public perception. This high cost of non-compliance compels companies to actively cultivate a “green” image based on ecologically sound production practices. (Ranger 1993: 44.)

2.5 STUDIES EXAMINING THE RELATIONSHIP BETWEEN ENVIRONMENTAL PERFORMANCE AND FINANCIAL PERFORMANCE

Previous studies that examined the relationship between environmental performance and financial performance have inconsistent results. Bragdon & Marlin (1972: 17) found initial support for a positive correlation between better pollution control and higher firm profitability. Bowman & Haire (1975: 52 – 53) reexamined the same data, but partitioned firms into three levels of environmental performance. They found evidence for an inverted U-shaped curve. Firms with a median level environmental performance had a higher return on equity than either extreme. Firms with a low level environmental performance had a lower return on equity than those with a high level environmental performance.

Spicer (1978a: 109) found that better pollution control is associated with higher profitability and price/earnings ratios, lower risk and larger size. Chen & Metcalf (1980: 177) disputed the findings of Spicer and found that the moderate to strong associations between pollution control record and financial indicators are spurious due to at least one common background variable, namely size of operation.

The above studies used accounting numbers to measure the relationship between environmental performance and financial performance, while the following studies used stock market performance:

- Alexander & Buchholz (1978: 479) evaluated stock market performance over five years and adjusted performance for risk in an effort to eliminate the “empirical deficiencies” they had identified in two studies with contradictory findings by Moskowitz (1972) and Vance (1975) respectively. They found that the degree of social responsibility as measured by the rankings of businessmen and students bears no significant relationship to stock market performance. They suggested that the reason for this was that stock markets are efficient and therefore any positive or negative effects associated with the degree of social responsibility of a firm are reflected immediately in its stock price. (Alexander & Buchholz 1978: 485.)
- Spicer (1978b: 80) found that knowledge of companies’ relative pollution control records does appear to have the potential to convey some relevant information to investors for judging the riskiness of the common stocks of companies in pollution-prone industries.
- Shane and Spicer (1983: 534 – 535) found some significant associations between security price movements and the release of externally produced social performance information, e.g. companies revealed to have low pollution-control performance rankings were found to have significantly more negative returns than companies with high rankings.
- Stevens (1984: 56) found that cumulative average returns for portfolios of firms with “high” estimated expenditures for pollution control are consistently below the returns for portfolios of firms with “low” estimated expenditures as well as being consistently below control portfolio returns.

- Mahapatra (1984: 37) came to the conclusion that investors view pollution control expenditures, legally or voluntary, as a drain on resources which could have been invested profitably, and do not “reward” the companies for socially responsible behaviour.

Arlow & Gannon (1982: 240) examined empirical research on corporate social responsiveness, including its relationship to economic performance. They found that the research studies do not provide strong support for a positive relationship between social responsiveness and economic performance, and concluded that economic performance is not directly linked, positively or negatively, to social responsiveness.

Cochran & Wood (1984: 54 – 55) found that *within industry groups* the financial variable most strongly correlated with corporate social responsibility (CSR) is asset age and that omission of this variable results in a spurious correlation of CSR and financial performance. Specifically, firms with older assets have lower CSR ratings. They also found that even after controlling for asset age, using a large sample, and industry-specific control groups, there still is weak support for a link between CSR and financial performance.

Ullmann (1985: 540) studied the inconsistent findings that had resulted from studies of the relationships among social disclosure, social performance, and economic performance of US corporations. He could not detect a clear tendency but identified a lack in theory, inappropriate definition of key terms, and deficiencies in the available empirical data bases as the main reasons for the inconsistencies.

Aupperle, Carroll & Hatfield (1985: 462) found no statistically significant relationships between social responsibility and profitability and concluded that there is insufficient evidence to support the claim that social responsible firms are more profitable than other firms.

Freedman and Jaggi (1988: 54) studied the association between the extent of pollution disclosures and economic performance of firms belonging to four highly polluting industries. The results for the total sample indicated that there is no association between the extensiveness of pollution disclosures and economic performance. However, a significant positive correlation was detected for the oil refining industry when the sample was segmented by industry group. They also found that large firms with poor economic performance are likely to provide detailed pollution disclosures.

McGuire, Sundgren & Schneeweis (1988: 869) found that prior financial performance is generally a better predictor of corporate social responsibility than subsequent performance. They argue that firms with high financial performance and low risk may be better able to afford to act in a socially responsible manner.

Belkaoui & Karpik (1989: 47) found that the larger the firm the more likely it is that managers authorize outlays for social performance that defer reported earnings from current to future periods. They attributed the insignificant and negative regression coefficient yet positive pairwise correlation association of economic performance with social disclosure to a multicollinearity problem encountered in the study and suggested that this multicollinearity effect may also explain the observance in other studies of either positive, negative or no correlation of profitability with social disclosure.

In a South African study Wilkinson (1989: ii) reached contradictory results: High profitability as measured in accounting terms does not correlate with a high corporate social responsibility rating. High profitability as measured in market terms does however correlate with a high responsibility rating.

Capon, Farley & Hoenig (1990: 1143; 1149) performed a meta-analysis of results from studies relating various factors to financial performance. They found a positive correlation between social responsibility and financial performance.

Patten (1991: 305) found that the results of regression analysis on the level of social disclosure indicate that both size and industry classification are significant explanatory variables. In contrast, the profitability variables included in the analysis were not significantly associated with the extent of social disclosure.

Hackston & Milne (1996: 101) reported results for New Zealand companies that show that both size and industry are significantly associated with amount of disclosure, while profitability is not.

According to Klassen (1995: 40) efforts to evaluate performance at firm level suffer from a limited view of both environmental performance and business performance. Klassen & McLaughlin (1996: 1212 – 1213) argue that, according to the efficient market theory, stock prices are proxies for financial performance, and thus to a large degree represent the actual financial benefits of environmental performance. Significant positive abnormal stock returns were documented following positive environmental events, highlighting the perceived value of strong environmental performance. Significant negative returns were documented for environmental crises, adding further empirical support for a causal link between environmental and perceived future financial performance.

Although environmental risks, opportunities, and liabilities have the capacity to profoundly affect the profitability and, indeed, the viability of the firm, empirical work in this area is meager. Results of previous research have been mixed due to short time intervals studied, lack of control variables and questionable or insufficient dependent variables. (Allen 1994: 125.)

Allen's study examined performance over the 1980 – 1989 time period for companies ranked by the Council on Economic Priorities (an independent, research-oriented, non-profit organization) and which have information available on the Compustat database. Findings of this study include the following:

- Corporate performance with regard to environmental responsibility is related to overall firm value as gauged by the measure excess value. Adopting an

environmentally responsible strategy appears to significantly enhance corporate financial performance for all firms except those serving industrial customers. Contrarily, those firms supplying industrial customers seem actually to be benefiting financially from a strategy of environmental indifference or irresponsibility.

- The enhanced financial performance of environmentally responsible firms (other than those that serve industrial customers) appears to be attributable to stakeholder-agency considerations. The significantly superior financial performance of environmentally responsible corporations in this category seem to be due to stakeholders rewarding and/or not penalizing firms which are environmentally responsible. That is, a strategy of environmental responsibility produces greater stakeholder cash flows and/or lower stakeholder-agency costs. This may occur, in whole or in part, from enhanced revenues, lower operating costs, a lower cost of capital and lower regulatory risk for environmentally responsible firms.
- The exception to the findings, firms who serve industrial customers, may also be stakeholder-agency related. Stakeholders' general awareness of a firms' predisposed strategy towards environmental responsibility and/or the ability of stakeholders to reward or penalize such behaviour may be less for industrial suppliers than it is for firms which make products for or provide services to the ultimate consumer.

Huckle (1995: 87) found that the profitability of a company in the industrial or mining sectors of the JSE, is unrelated to the level of environmental responsibility demonstrated by the management of that company. Thus management should not assume that companies which are environmentally responsible are necessarily any more profitable or indeed, that companies which are not environmentally responsible are necessarily any less profitable. Similarly, the results of this research also suggest that the argument against being environmentally responsible, because it involves expenditure without adequate return, is unfounded. In general, those companies that demonstrate a high level of environmental responsibility can expect the same returns as those which demonstrate an inferior level of environmental responsibility.

In 1994, Hart and Ahuja of the University of Michigan examined 127 Standard & Poor's (S & P) 500 firms in manufacturing, mining, or some type of production. They produced a variable called "emissions reduction" based on the Investor Responsibility Research Center's (IRRC) 1993 Corporate Environment Profile. Then it was easy to seek correlation between decreases in emissions and an improved "bottom line". They found that return on sales and return on assets began to improve significantly the year after a major reduction in emissions. It took about two years for an effect to be seen on return of equity. The study also reached the not-unexpected conclusion that the biggest polluters enjoyed the greatest bottom-line benefits in cleaning up. Yet it suggests that even relatively clean companies can profit from the effort. (Schmidheiny & Zorraquin 1996: 65.)

A similar study in 1995 by the IRRC itself used U.S. government data to divide all S & P 500 firms into "high" and "low" polluters – based on such variables as litigation, fines, toxic emissions, size of chemical spills, and so on – and then tracked the stock market results of these two "portfolios". The authors concluded that:

"Overall, the study found no penalty for investing in a "green" portfolio and, in many cases, low pollution portfolios achieved better returns than high pollution packages and the S & P 500 index. The study suggests that the increased attention being paid to environmental issues by both corporations and investors may well be warranted from the perspective of financial self-interest". (Schmidheiny & Zorraquin 1996: 66.)

In both of the studies mentioned above, the authors noted that although they had found a correlation between increased eco-efficiency and improved financial results, they had not proved cause-and-effect. Causality might run "backwards", in the sense that increasingly profitable firms might have more money to invest in eco-efficiency. However, according to Hart and Ahuja, "our hunch is that a 'virtuous circle' exists...That is, firms can realize cost savings and plow those savings back into further emission reduction projects for a number of years before

the investment/savings balance turns negative". (Schmidheiny & Zorraquin 1996: 66.)

If causality between environmental responsibility and financial performance can be proved, i.e. higher environmental responsibility causes higher profits, it could revolutionize management's attitude towards eco-efficiency. This study will investigate the possibility to use a causality test.

A summary of the findings of studies examining the relationship between environmental performance and financial performance is presented in tables 2-1 to 2-7. In these tables "positive" refers to a finding of a positive correlation between environmental performance and financial performance or another positive conclusion. "Negative" refers to a negative conclusion, e.g. that no relationship exists. "Neither" refers to a finding that is neither positive nor negative, e.g. the finding is inconclusive or contradictory.

Studies that used accounting numbers

<i>Study</i>	<i>Finding</i>	<i>Positive</i>	<i>Negative</i>	<i>Neither</i>
Bragdon & Marlin (1972)	Positive correlation between better pollution control and higher firm profitability	1		
Bowman & Haire (1972)	U-shaped correlation, with median level environmental performance showing best results			1
Spicer (1978a)	Positive correlation	1		
Chen & Metcalf (1980)	No correlation		1	
Cochran & Wood (1984)	Weak support for a link		1	
Aupperle, Carroll & Hatfield (1985)	No statistically significant relationships		1	
Allen (1994)	Positive correlation (except for those serving industrial customers)	1		
Hart & Ahuja (1994)	Positive correlation	1		
Huckle (1995) – S.A. study	No relationship (studied companies in industrial or mining sectors)		1	
		4	4	1

Table 2-1

Studies that used stock market measures

<i>Study</i>	<i>Finding</i>	<i>Positive</i>	<i>Negative</i>	<i>Neither</i>
Alexander & Buchholz (1978)	No relationship		1	
Spicer (1978b)	Relevant risk information conveyed to investors	1		
Shane & Spicer (1983)	Positive relationship	1		
Stevens (1984)	Positive relationship	1		
Mahapatra (1984)	Investors view pollution control expenditures as a drain on resources		1	
Klassen & McLaughlin (1995)	Significant positive abnormal returns for positive environmental events and vice versa	1		
IRRC (1995)	Positive correlation	1		
		5	2	–

Table 2-2

Studies that used accounting numbers and stock market measures

<i>Study</i>	<i>Finding</i>	<i>Positive</i>	<i>Negative</i>	<i>Neither</i>
McGuire, Sundgren & Schneeweis (1988)	Prior financial performance is a better predictor of corporate social responsibility		1	
Wilkinson (1989) – S.A. study	High profitability measured in accounting terms does not correlate with a high corporate social responsibility, but when measured in market terms it does correlate.			1
		–	1	1

*Table2-3**Studies that examined other studies*

<i>Study</i>	<i>Finding</i>	<i>Positive</i>	<i>Negative</i>	<i>Neither</i>
Arlow & Gannon (1982)	No relationship		1	
Ullmann (1985)	No clear tendency		1	
		–	2	–

Table 2-4

Studies that compared disclosure and financial performance

<i>Study</i>	<i>Finding</i>	<i>Positive</i>	<i>Negative</i>	<i>Neither</i>
Freedman & Jaggi (1988)	No relationship for total sample, positive correlation for oil refining industry		1	
Belkaoui & Karpik (1989)	Inconclusive			1
Patten (1991)	No significant association		1	
Hackston & Milne (1996)	No significant association		1	
		-	3	1

Table 2-5

Study that used meta-analysis

<i>Study</i>	<i>Finding</i>	<i>Positive</i>	<i>Negative</i>	<i>Neither</i>
Capon, Farley & Hoenig (1990)	Positive correlation	1		

Table 2-6

Summary of findings

<i>Type of study</i>	<i>Positive</i>	<i>Negative</i>	<i>Neither</i>
Empirical research using accounting numbers as measures of financial performance	4	4	1
Empirical research using stock market measures as measures of financial performance	5	2	–
Empirical research using both accounting numbers and stock market measures as measures of financial performance		1	1
Empirical research comparing social disclosure and financial performance		3	1
Empirical research using meta-analysis (social responsibility one factor out of twenty-five tested)	1		
	10	10	3
Studies examining other studies due to inconsistencies		2	
	10	12	3

Table 2-7

From the table 2-7 it can be seen that researchers who used stock market measures as measures for financial performance, were the most successful to prove a positive relationship between environmental (or social) responsibility and financial performance. For those that used accounting numbers one half proved a positive relationship and the other half had negative findings. One study found the

median level of environmental performance to be the most profitable (indicated as “neither” in above table).

Two studies used both accounting numbers and stock market measures as measures for financial performance. One came to a negative conclusion and the other found the accounting numbers measures proved negative and the stock market measures positive (indicated as neither in above table).

The studies comparing social disclosure and financial performance had negative findings except for one finding that was contradictory (indicated as neither in above table). These negative findings may indicate that using social disclosure as a measure of environmental responsibility may not be acceptable. Whether social (including environmental) disclosure can be used as a measure for environmental responsibility will be discussed in chapter 3.

The two studies that examined other studies due to the inconsistent results in this field of research had overall negative findings. The study that performed a meta-analysis to determine various factors that impact on financial performance found that social responsibility is positively correlated.

From the above-mentioned it is clear that further research is necessary to determine the relationship between environmental responsibility and financial performance, especially where accounting numbers are used as a measure for financial performance. However, it will be of the utmost importance to use the most appropriate measures for environmental responsibility and for financial performance respectively. This will be discussed in chapters 3 and 4 respectively.

2.6 SUMMARY AND CONCLUSIONS

A theoretical foundation for environmental reporting can be identified in the accounting definitions as well as in AC 000, *Framework for the preparation and presentation of financial statements*. Environmental events have proven to have a financial character, especially through claims against enterprises. Stakeholders

require accountability with regard to environmental performance in order to make economic decisions.

Conventional accounting does not meet all the expectations of stakeholders regarding environmental reporting. The upward trend in environmental costs has led to a push for better environmental accounting. Enterprises that have learned more about their own costs by implementing environmental accounting practices, have identified opportunities to improve environmental and economic performance.

Conventional accounting is developing to include environmental considerations. However, this evolutionary process will not be enough to be fully responsive to the change in culture that comes with greater environmental sensitivity and therefore totally new developments are also necessary.

The stakeholders interested in environmental reporting are society; governments and their agencies; local communities; customers; suppliers and other trading partners; employees; investors, lenders and insurers as well as accountants and auditors.

Over time, new social expectations arise and new activities are seen as being socially desirable. Society is placing increasing emphasis on the importance of the environment and managing the environment in a more responsible manner.

Greening social conscience and changing social expectations have been translated into more stringent environmental laws. At present South Africa does not have such stringent laws as for example the United States. The South African government has realized some of the limitations of existing legislation and is taking steps to remedy the situation. The mining sector has recently felt the effect of South African environmental law moving in the direction of international environmental law. The National Water Act 36 of 1998 applies the polluter pays principle. The mining sector are now required to compete on an equal legal

footing with other interests when it comes to demands placed on the use of the country's water, land or mineral resources.

Local communities demand a high level of environmental performance from its industrial neighbours and seek some degree of reassurance that they are not exposed to significant environmental risk.

Customers have a definite influence on companies to improve their environmental performance. "Green consumers" are now switching from brand loyalty to company loyalty. Companies are motivated by an enhancement of their competitive position to improve their environmental performance.

In efforts to improve overall environmental performance, many companies are exercising their own rights both as purchasers and as vendors and are demanding that all of the companies within their supply chain seek to minimize their own environmental impacts. It is important for South African exporters to adhere to environmental standards to gain access to international markets.

Employees wish to work for ethical and responsible companies in addition to their concerns regarding their own working and living environment.

Investors, lenders and insurers require very much the same type of information about the environmental risk that a company faces. The quality of a company's environmental management can attract investors, move lenders to grant loans and ensure that insurance can be obtained.

Accountants and auditors are coming under increasing pressure to include environmental information in the accounts of both companies and countries. The accounting profession is showing a great deal of energy and creativity in trying to make financial accounting better reflect the sorts of environmental realities that already or may soon affect business. Accountants and auditors who fail to offer the right information now may in future have to pay for their mistakes.

The costs of environmental responsibility may arise when an environmentally responsible company exceeds regulatory compliance. One of the biggest risks involved with this strategy is the possibility of more efficient and/or cheaper technology being introduced after the company undertakes a large outlay of funds for equipment. Another possibility is that regulations do not become more stringent and/or the benefits of cheaper daily operations do not exceed the outlay.

The benefits of environmental responsibility include a decrease in the cost of operations due to improved production yields, decrease in costs associated with employees, minimization of material and energy use, decrease in excess packaging, and decrease in waste that needs safe disposal.

Enhanced revenues via environmental responsibility may be achieved through improved competitiveness, improved product quality, marketing based on environmental responsibility, attracting business partners relating to distribution and supply of complementary products or services as well as attracting more competent board members.

Another way that the environmentally responsible company may prosper is through the reduction of its cost of capital while simultaneously increasing its accessibility to funds.

An environmentally responsible company has less regulatory risks and need not be concerned about non-compliance resulting in lost production, fines, negative publicity, a subsequent costly public relations campaign and expensive litigation. New regulations could force competitors to bear additional costs that may lead to their decline in the market.

Previous studies that examined the relationship between environmental performance and financial performance have inconsistent results. Reasons offered by Ullmann (1985) are a lack in theory, inappropriate definition of key terms, and deficiencies in the available empirical data bases. Belkaoui & Karpik (1989) suggested that a multicollinearity effect may explain the observance in

other studies of either positive, negative or no correlation of financial performance with social disclosure. According to Allen (1994) results of previous research have been mixed due to short time intervals studied, lack of control variables and questionable or insufficient dependent variables. According to Klassen (1995) efforts to evaluate performance at firm level suffer from a limited view of both environmental performance and business performance. Based on the studies performed since 1972 to 1996 the final conclusion regarding the relationship between environmental responsibility and financial performance still seems evasive.