



Research and Survey Report on Environmental Accounting in South Africa

2001

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Executive summary

Environmental accounting is a business trend, a best practice technique, an emerging generally accepted principle and a tool for improved management and reporting. Although no official international accounting standard exists yet, there are numerous guidelines that have been issued by governments, accounting institutes and environmental agencies in an attempt to clarify and evolve the discipline of environmental accounting.

The findings of this survey, conducted among 19 of South Africa's top organisations, suggests that there is a growing awareness of the significant financial implications of environmental performance and that environmental accounting practices are gradually increasing. The current application of environmental accounting, however, remains at extremely low levels.

While the surveyed companies claimed to have financial environmental information of various types, including for example capital expenditure, operating expenditure, liabilities and provisions, very few seemed able and / or willing to readily access and accurately report on this data.

Environmental capital expenditures were mostly associated with water, waste and air impacts, while environmental operating expenditure related mainly to technology, rehabilitation and consultants. Environmental liabilities were chiefly incurred in relation to land rehabilitation and water contamination.

Approximately a third of the sample was spending more than R100 million on environmental issues. However, environmental cost savings, cost avoidances and revenues are not widely measured or reported. Where they were disclosed in the survey, most were comprised of environmental revenues and were related to energy programmes.

Implementing environmental accounting is a process that requires identification of criteria, definition of environmental costs and liabilities, application of allocation proportions, modification of existing accounting systems, extraction of management accounting reports and agreement on the disclosure practices to be followed.

Finally, environmental accounting should be seen as one of the ways to challenge the widely held perception of environmental management as only a generator of costs. In particular, a future focus on tracking the financial benefits should prove that there are significant returns on investments in environmental good practice.



Introduction

Environmental accounting is a trend which started building steadily through the 1980s and early 1990s, but only really got going in the late 1990s. Although it is still far from being widely understood or commonly practiced, environmental accounting continues to work its way into the mainstream of business and, in the first years of the 21st century, is one of those 'ideas whose time has come'.

The reason is quite simple: today, environmental issues are having significant and increasing impact on the financial performance of companies. And since they have started to affect the bottom line, managers need an information tool which will allow them to manage and control these financial impacts. Environmental accounting is that tool, both conceptually and in practice.

Definitions

But what do we mean by environmental accounting? There are three possible groups of definition:

- **National environmental accounting** – which refers to national measures that factor in the state of the environment, either by adjusting traditional national accounting indicators, such as Gross Domestic Product, or by generating measures of national environmental resources and pollution emissions. Examples include the Index for Sustainable Economic Welfare, the Genuine Progress Indicator and the Environmental Sustainability Index.
- **Environmental financial accounting** – which refers to the way in which environmental issues impact on the financial statements of companies and the accounting 'rules' which govern the recognition and disclosure of these in the balance sheet, income statement and related aspects of the annual financial report. Examples include environmental liabilities, provisions for rehabilitation and capital expenditure on the environment.
- **Environmental management accounting** – which refers to the way in which internal accounting systems can be designed to ensure that management receives timely and relevant information on environmental costs and liabilities, as a support to financial and environmental planning and decision making. Examples include detailed environmental cost breakdowns and estimates for contingent liabilities relating to environment impacts or controls.

This survey report focuses only on environmental financial and management accounting.

Survey methodology

The survey sample consisted primarily of the Industrial Environmental Forum's (IEF's) corporate members and recipients of KPMG's Sustainability Factfiles (an email-based information service). The questionnaire, which was developed by KPMG and the IEF, was emailed, faxed and placed on the internet for completion by the sample target companies between March and August 2001. A copy of the questionnaire is included in Annexure B.

There were 19 respondents, from the following industry sectors: mining and metals (7), parastatals and utilities (5), oil and chemicals (4) and motor and manufacturing (3). Three of these were subsidiaries of parent companies which also responded to the survey. A full list of respondents is included in Annexure A. Given the small sample and respondent size, the findings are to be viewed as indicative, rather than representative, conclusive, or statistically significant.



Rationale for environmental accounting

Financial impacts of environmental issues

There are various ways in which environmental issues can impact on the finances of companies. These are briefly described below under typical financial accounting categories.

- **Tangible fixed assets** – For example, the costs of upgrading plant and equipment to comply with environmental legislation or standards, increased depreciation on assets due to the introduction of more stringent environmental requirements, or the devaluation of land due to pollution and contamination.
- **Intangible assets** – For example, loss of consumer goodwill and devaluation of brand value due to poor environmental performance or negative publicity associated with environmental issues.
- **Variable assets** – For example, stock obsolescence due to bans or boycotts on certain substances (eg, CFCs, lead, asbestos), or forced product withdrawals due to unacceptable health or safety impacts associated with certain product lines.
- **Contingencies, liabilities and provisions** – For example, provisions for environmental rehabilitation, contamination clean up costs, or litigation or new taxes on environmental impacts.

In South Africa, the mines already incur hundreds of millions of Rands of environmental liabilities in terms of rehabilitation costs. In addition, numerous companies have begun to feel the significant financial effects of community activism, litigation and the application of global standards on environmental issues.

Benefits of environmental accounting

There are numerous reasons why environmental accounting makes good business sense. For example, environmental accounting can:

- Demonstrate the impact of financial issues on the income statement and balance sheet;
- Facilitate financial planning, such as the creation of provisions for potential environmental liabilities;
- Help to identify cost reduction and process improvement opportunities, such as in the areas of water management, energy efficiency and waste reduction;

- Assist with the prioritization of environmental actions, namely to focus on those issues with the potentially largest financial impact;
- Guide product decisions, such as product development, pricing and mix, where activity based costing allows environmental costs to be factored in;
- Support environmental management systems and environmental managers;
- Demonstrate transparency to stakeholders, through reporting of environmental financial information; and
- Encourage the move towards sustainable development or the triple bottom line, which integrates economic (including financial), environmental and social performance.



Standards and guidelines

There is, as yet, no dedicated international accounting standard, issued within the framework of GAAP (Generally Accepted Accounting Principles), which deals specifically with environmental accounting. Nevertheless, there are various existing international accounting and auditing standards that refer to or are applicable to environmental issues. For example:

- International Accounting Standard (IAS) 16 – Property, Plant, Equipment and Rehabilitation Costs; and
- IAS 37 – Provisions, Contingent Liabilities and Contingent Assets (equivalent to the UK standard FRS 12 and the South African standard AC 130); and
- International Auditing Practice Statement (IAPS) 1010 – The Consideration of Environmental Matters in the Audit of Financial Statements (1998, equivalent to the 1999 South African Auditing Standard (SAAS) 2501);

The Federation of European Accountants (FEE) has summarised these in its 'Review of International Accounting Standards for Environmental Issues' (1999).

There have also been numerous initiatives by both accounting institutes and environmental agencies that have produced legislation and guidelines on environmental accounting. For example:

- United States – Comprehensive Environmental Response Compensation and Liability Act or 'Superfund' (1980);
- Canadian Institute of Chartered Accountants – Environmental Costs and Liabilities: Accounting and Financial Reporting Issues (1993);
- Institute of Chartered Accountants in England and Wales – Financial Reporting of Environmental Liabilities: A Discussion Paper (1995);

- American Institute of Certified Public Accountants' Statement of Practice (SOP) 96-1 – Environmental Remediation Liabilities (1996);
- United Nations Conference on Trade and Development (UNCTAD) – Accounting and Financial Reporting for Environmental Costs and Liabilities (1999);
- International Federation of Accountants – Environmental Management in Organisations: The Role of Management Accounting (1999);
- Japanese Environment Agency – Grasping Environment Cost Accounting (1999);
- Commission of the European Communities – White Paper on Environmental Liabilities (2000); and
- Commission of the European Communities – Recommendation on the Recognition, Measurement and Disclosure of Environmental Issues in the Annual Accounts and Annual Reports of Companies (2001).

Environmental accounting is closely related to environmental disclosure or reporting, on which there has also been a recent proliferation of legislation, standards and guidelines. The Global Reporting Initiative's *Sustainability Reporting Guidelines* (2000) are perhaps the most recent and comprehensive, but there are numerous others as well. These are discussed in more detail in KPMG's annual Sustainability Reporting Surveys, which are available on request.



Survey findings

Strategic importance

The following survey findings demonstrate the growing financial importance of environmental issues:

- 65% of the survey respondents regarded the potential financial impacts of environmental issues as 'highly significant', while the remaining 35% believed them to be 'moderately significant';
- More than half (53%) of the companies surveyed are spending in excess of R10 million a year on environmental issues, with a third (32%) spending more than R100 million a year;
- 59% of respondents claimed that environmental management was linked to the financial compensation (salaries, bonuses, etc) of their senior management;
- 82% of companies claimed to include, in their contractor agreements, financial penalty or termination clauses relating to unacceptable environmental performance; and
- In terms of relative expenditure on various social and ethical issues, affirmative action / training was ranked highest most often, followed equally by environment / biodiversity and health and safety.

Financial information

Most of the surveyed companies claimed to be measuring environmental information relating to capital expenditure (89%), operating expenditure (79%), liabilities (74%), donations (63%) and provisions (58%). However, very few were reporting these in their annual financial statements, or even in their separate corporate environmental reports.

On average 36% of capital expenditure by the companies surveyed was being spent on water, 36% on waste and 23% on air related impacts, with less than 10% on soil and energy. Environmental liabilities, on the other hand, mainly relate to land rehabilitation, especially for waste sites and mining, as well as water. Operating expenditures are mainly allocated to technology (24%), rehabilitation (20%) and consultants (17%).

Cost savings

65% of the survey respondents saw legislation and environmental management systems as key drivers for environmental cost savings initiatives, while the profit motive and efficiency were cited by just over half (53%) of the companies. Industry initiatives (35%) and environmental accounting systems (18%) were seen as less important drivers.

All (100%) of the companies in the survey claimed to have formal environmental management systems and waste management programmes. 81% mentioned water management programmes, while only 56% had air management programmes and energy management programmes. Actual cost savings were seen to be most often linked to waste recycling and water reductions (by 93% of respondents), as well as to energy savings (79%).

Only seven companies (37%) claimed to have any environmental cost savings information, while only five companies (26%) responded with actual financial data on environmental cost savings, cost avoidance and revenue. This probably reflects the current lack of formal environmental accounting systems, which would enable such information to be constantly tracked and easily accessible. Of these five companies, the data for one was excluded from the analysis, since the revenues cited appeared to relate directly to their core business as a utility.

For the four companies analysed, the cumulative environmental cost savings, cost avoidance and revenues achieved over the past five years amounted more than R55 million. Of this, the majority was made up of environmental revenues (67%), as compared with cost savings (18%) and cost avoidance (15%). In terms of the source of financial benefits, these were mostly associated with energy (66%), as compared with water (33%) and waste (1%). The data also showed a trend of increasing recorded benefits over time, with nearly half (47%) of the total for the past five years relating to the year 2000.



Implementing environmental accounting

To the author's knowledge, only Eskom out of the 19 companies surveyed have designed and implemented a fairly comprehensive environmental accounting system, which allows for the extraction of detailed management cost information relating to environmental issues. Among other companies that have environmental accounting initiatives, Sasol Chemical Industries' Water Systems Division at Sasolburg has piloted an environmental accounting system, while Caltex follows the environmental cost allocation guidelines of the American Petroleum Institute.

The approach to environmental accounting will vary for each company. However, KPMG has developed a generic methodology with the following steps:

1. Reviewing the **status quo** of environmental accounting within the business;
2. Defining the **criteria** for determining environmental costs and liabilities;
3. Determining environmental accounting **definitions**;
4. Creating **guidelines** for the allocation of environmental costs and liabilities;
5. Making modifications to the current accounting **system** to extract environmental information; and
6. Agreeing standards for environmental accounting **disclosure** and **treatment**.

It is often appropriate for companies to tackle various aspects of environmental accounting in phases. For example, to begin with environmental capital expenditure, then focus on operating environmental costs, followed by environmental liabilities and lastly to evaluate external environmental costs to society. Similarly, integration with other systems or methodologies, such as Activity-Based Costing or Life Cycle Assessment, may only be appropriate as an enhancement of a more basic environmental accounting system.

Among the international companies that have been pioneers in designing and implementing environmental accounting systems are: AT&T, Baxter International, BT, Dow Chemical, Ontario Hydro and Pacific Gas and Electric.

Instructive texts on environmental accounting include *The Green Bottom Line: Environmental Accounting for Management* edited by Martin Bennett and Peter James (Greenleaf Publishing 1998) and *Accounting and the Environment* by Rob Gray and Jan Bebbington (Second Edition, Sage Publications 2001).

The United States Environmental Protection Agency website also contains useful case studies on environmental accounting. In addition, ongoing guidance is available through the Centre for Social and Environmental Accounting Research (CSEAR) and the Association of Certified Chartered Accountants (ACCA).



Conclusion

Environmental accounting is a management tool which, if applied correctly, should support and enhance the financial and environmental disciplines alike. This survey has demonstrated an awareness among a sample of top South African companies of the financial importance of environmental issues. Nevertheless, application of environmental accounting methods, especially the tracking of financial benefits relating to environmental programmes, remains the exception rather than the rule. Consequently, there are also very few companies that can readily access information on their environmental costs and liabilities, or be in a position to disclose these in their annual reports.

It is hoped that the environmental accounting field will continue to develop and be applied by forward-thinking companies. Not only will this improve overall management and reporting on environmental issues, it will also help to change the widely held perception that environmental issues only imply costs, with little or no financial returns. Business will discover that, through environmental cost savings, cost avoidance, revenues and liability reduction, significant financial benefits can also accrue from good environmental management.



Annexure A:

List of survey respondents

Anglo American plc
Anglovaal Mining Ltd
Anglovaal Mining Ltd – Feralloys
Anglovaal Mining Ltd – Nkomati Mine
Associated Manganese Mines of SA Ltd
BMW (SA) Ltd
Caltex Southern & Central Africa
DaimlerChrysler SA
Eskom
EnviroServ Waste Management (Pty) Ltd
Johnson Matthey
Rand Water
Safcol
Saldanha Steel (Pty) Ltd
Samancor Chrome
Sasol Ltd
Sasol Chemical Industries – Water Systems Division
Shell SA Oil Products
Umgeni Water



Annexure B:

Summarised survey questionnaire

1. How would you categorise the potential financial impact of environmental issues on your business?
2. Is environmental management in the company formally linked to the senior management's financial compensation (salary, bonus, etc)?
3. What are the main drivers for the implementation of environmental cost-saving programmes / plans within your organisation?
- 4a. Does your organisation implement any environmental programmes?
- 4b. Does your organisation track the financial benefits of any environmental programmes?
- 4c. Does your organisation set objectives and targets for these cost saving programmes?
- 5a. What is your perception of the relative expenditure by your company on social or ethical issues?
- 5b. What is your perception of the relative reporting by your company on social or ethical issues?
6. Does your organisation actively promote environmental cost savings?
7. Do contractor agreements have financial penalty or termination clauses related to unacceptable environmental performance?
8. What is your approximate estimate of your annual budget for total environmentally related expenditure?
9. Which environmental financial measures are recorded or estimated (although not necessarily publicly disclosed) by the company?
10. Which environmental financial measures are publicly reported by the company, either in the Annual Financial Statements, and/or in the Text of the Annual Report and / or in a separate Corporate Environmental or other Report, or Not Disclosed?
11. Which environmental financial measures relate to your company?
12. Of your total environmental **capital expenditure** in the last financial year, please estimate (or guesstimate) the relative proportion (as an approximate percentage) spent on environmental management.
13. Of your total environmental **operating expenditure** in the last financial year, please estimate (or guesstimate) the relative proportion (as an approximate percentage) spent on environmental cost categories.
14. Of your total environmental **liabilities** or **contingent liabilities** in the last financial year, please estimate (or guesstimate) the relative proportion (as an approximate percentage) spent on environmental cost categories.



Annexure C:

KPMG Sustainability Services

KPMG is one of the world's largest global professional services organisations. In 2000, KPMG achieved record revenues of US\$13.5 billion, an 11 percent increase driven by all of our major service lines. More than 100,000 KPMG professionals in member firms worldwide collaborate across industry, service and national boundaries to deliver professional services in 155 countries.

Hence, we are well placed to assist organisations to respond pragmatically to the sustainability challenge. The heart of our approach is to relate environmental, social, ethical, economic and financial issues to the core strategy, management objectives and operational processes of any organisation.

Specifically, KPMG's Sustainability Services cover the Social and Ethical Integrity and the Environmental, Health and Safety spheres. These services are described briefly below.

Environment, health and safety (EHS)

KPMG has environmental practices comprising more than 160 professionals in 26 countries. In South Africa, our EHS Unit has offices in Cape Town, Durban and Johannesburg and provides the following core services:

- Strategy and governance – conducting strategic analyses and corporate governance assessments to position EHS management for the future.
- Management systems and standards – Certifying management systems for compliance with ISO 14001 and OHSAS 18001.
- Audits and assessments – auditing compliance of EHS management systems and performance with legal and other standards, including due diligence investigations.
- Finance and accounting – integrating EHS issues into financial and accounting systems to provide essential management information.
- Reporting and verification – benchmarking, advising on and verifying EHS data systems, disclosures and reports.
- Ethics Line – providing an independent call-centre facility to manage stakeholder communications more efficiently and effectively.
- Climate change and the Kyoto Protocol – providing strategic advice and verification services related to flexible instruments for greenhouse gas emissions reduction.
- Briefings and training – supplying tailored presentations and courses on all aspects of our EHS services.
- Research and benchmarking – conducting tailored research and benchmarking on all subjects related to our EHS services.

Social and ethical integrity

KPMG has ethics and integrity practices comprising more than 30 professionals in 9 countries. In South Africa, the Business Ethics Consulting Unit has offices in Cape Town and Johannesburg and provides the following core services:

- Integrity Thermometer – applying an interactive, web-based tool that measures the level of integrity within an organisation.
- Cards on the Table – introducing and facilitating a game of ethical dilemmas to sensitise staff to their ethical values.
- Codes of Conduct – developing and implementing social and ethical policies and codes of conduct to guide organizations.
- Accountability – advising on, developing and conducting social and ethical accounting, auditing and reporting.
- Ethics Helpline – assisting with the design and implementation of an internal helpline, or offering an independent call-centre service.
- Impact Assessment – conducting ethics impact assessments on the effects of policies, procedures or specific actions.
- Training – providing a one day Introduction to Business Ethics course, as well as Ethics Officer training.
- "Just right" services – supplying tailored services relating to ethics policy, communications and training.

For further information, please contact:

Wayne Visser
Environmental, Health & Safety Unit
Tel: (021) 423 8940
Fax: (011) 423 8937
Email: wayne.visser@kpmg.co.za
Website: <http://www.kpmg.co.za>

Daniël Malan
Business Ethics Consulting
Tel: (021) 408 7000
Fax: (021) 419 7503
Email: daniel.malan@kpmg.co.za



Annexure D:

Industrial Environmental Forum of Southern Africa

The Industrial Environmental Forum of Southern Africa (IEF) is a recognised environmental association which provides a forum for businesses in Southern Africa that are concerned about deteriorating environmental conditions, and who wish to contribute their skills and insight to develop and share sustainable corporate ideas.

Sustainability principles underpin the philosophy of the association. The IEF is dedicated to providing a platform from which members can benefit from increased business opportunities, employee empowerment, stakeholder confidence and shareholder return. This is achieved through the use of an extensive network for the transfer and sharing of information and knowledge, as well as by providing essential frameworks and tools for environmental managers and CEOs.

Through its close working relationship with other business associations, government and NGOs the IEF assists members in achieving a balance between wealth creation, social progress and environmental protection, and is rapidly becoming the business voice on sustainable development within Southern Africa. These coalitions and partnerships ensure that environmental matters are effectively co-ordinated, thereby limiting duplication of effort.

The IEF's strategic focus is on sustainability in business – what sustainable development means in the South African business context, how it may be achieved, and how it can be measured and benchmarked. This incorporates a range of subject matter, including environmental indicators, climate change, water and waste issues, environmental management systems, accounting and reporting, corporate governance, stakeholder relationships and corporate performance, to mention a few.

The work undertaken by the IEF is intended to complement that undertaken by other close affiliates (with whom we have overlapping membership) such as the Chemical and Allied Industries Association, the Chamber of Mines, Business South Africa and the South African Chamber of Business. In particular, the advocacy role undertaken by the IEF on sustainable development (preparations for the World Summit on Sustainable Development), climate change, the environmental law reform process and other topical issues, is conducted in conjunction with these organisations.

The IEF strongly believes in proactive interaction and partnerships in achieving organisational and policy goals. The IEF builds networks which extend across geographic, sectoral and other boundaries, with whom information (newsletters, events, policies and reports) are exchanged on a regular basis. Members are beneficiaries of this information and are kept current with respect to trends and activities.

As a regional partner of the World Business Council for Sustainable Development (WBCSD), the IEF participates in meetings and receives updates on the work of their Working Groups and projects, giving members access to a valuable intellectual resource and contact base.

The Secretariat of the IEF ensures that members receive legal and parliamentary updates, results of surveys, notification of forthcoming events, reports on a range of subject matter and a bimonthly newsletter.

For further information, please contact:

Tel: (011) 880 0077/9 or 447 9172

Fax: (011) 447 0848

Email: iefsa@mweb.co.za

Website: <http://www.ief.co.za>



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a leading South African management publication

1999

Golden Arrow

Top management consultants (separate division of
auditing or accounting firm)

2000

Golden Arrow

Top auditing and accounting firm

Golden Arrow

Top financial consultants to government

Silver Arrow

Top accounting/auditing firm in e-business

Voted as one of The Best Companies To Work For
by auditing firm, Deloitte & Touche and leading SA
business publication, Financial Mail

2000/2001

Nominated for Impumelelo South Africa's Top 300 Black
Empowerment Companies of the Year Award
(voted by its peers as a pioneer and an innovative
enterprise within its business market)