THE PRACTICE OF ENVIRONMENTAL MANAGEMENT ACCOUNTING IN SOUTH AFRICA

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STRUCTURE OF PRESENTATION

• Introduction and theoretical framework
• Methodological framework
• Findings and Discussion
• EMA implementation framework for South Africa
• Conclusion
1. Introduction & Theoretical Framework

South Africa’s (SA) Environmental legislative framework:
• Johannesburg Plan of Implementation (2002)
• Framework for considering market-based instruments to support environmental fiscal reform in South Africa (2006)

All re-affirming SA commitment to implement Agenda 21
Research and implementation of environmental management accounting (EMA) have steadily increased over the last decades, involving universities, industries and governments in developed countries. Conversely, research and implementation of EMA is in its infancy stage in developing countries including South Africa [7].

The practice and research of environmental accounting in South Africa over the past decade has focused on environmental reporting and disclosures [9-15]. There has been little attention to environment costing, life cycle costing, and full cost accounting.
In support of the above accession, KPMG states that: “There is growing awareness of the significant financial implications of environmental performance and that environmental accounting practices are gradually increasing in South Africa. However, the current application of environmental accounting remains at extremely very low levels” [16].

This study investigated and explores how companies in South Africa account for, and manages physical and monetary environmental information based on the IFAC international guidance document on EMA [6].
The following research questions were used for this study:

Research question 1: To what extend does South African companies identify, collect and analyse; (i) physical information on the use, flows and destinies of energy, water and materials?

Research question 2: To what extend does South African companies identify, collect and analyse; (ii) monetary information on environment-related costs, earnings and savings?

Research question 3: Can a framework for the implementation of environmental management accounting in South Africa be developed?
2). Methodological Framework

A grounded theory approach employing an exploratory qualitative technique was used for this study. Grounded theory is a qualitative research analysis technique whereby theory is generated from the collected data [17-22].

Thirty seven personal interviews were conducted with environmental, SHE managers and financial personnel from three industry sectors (mining and petrochemicals; manufacturing and industrial; and Services). Interview data was triangulated with an examination of sustainable development (annual reports) and other documentation of the case companies and industry data to validate the findings.
Figure 1 Overview of research method

- Choice of case study method with qualitative and quantitative data
- Design of interview structure and transcription
- Conduct of interviews and transcription
- Data analysis
- Development of conceptual framework and propositions
- Grounded theory approach
Figure 2: Selection of sample for the case study

131 South African Companies that are Members of the National Business Initiative (NBI) & South African Business Council for Sustainable Development

- 87 (62%) Companies Listed on the JSE
- 42 SA companies report based on GRI guidelines & listed on GRI data base
- 23 (62%) of the 42 SA GRI companies that form part of the 88 listed companies are members of NBI
- 50 (38%) Unlisted Companies
- Companies not reporting based on GRI guidelines
- 14 (38%) companies selected based in Gauteng that do not report based on GRI and unlisted and who are members of NBI

37 Companies selected from 131 = 28.24%
3. FINDINGS AND DISCUSSION

Table 1: The generation and recording of physical environmental information; where, (1) is extremely low, (2) low, (3) somewhat high, (4) high and (5) extremely high.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Total</th>
<th>Total %</th>
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</thead>
<tbody>
<tr>
<td>Raw &amp; Auxiliary Materials</td>
<td>11.1%</td>
<td>8.3%</td>
<td>16.7%</td>
<td>19.4%</td>
<td>44.4%</td>
<td>0%</td>
<td>36</td>
<td>100%</td>
</tr>
<tr>
<td>Packaging Materials</td>
<td>13.9%</td>
<td>19.4%</td>
<td>11.1%</td>
<td>30.6%</td>
<td>22.2%</td>
<td>2.8%</td>
<td>36</td>
<td>100%</td>
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<tr>
<td>Merchandise</td>
<td>16.7%</td>
<td>19.4%</td>
<td>19.4%</td>
<td>22.2%</td>
<td>16.7%</td>
<td>5.6%</td>
<td>36</td>
<td>100%</td>
</tr>
<tr>
<td>Operating Materials</td>
<td>5.6%</td>
<td>2.8%</td>
<td>36.1%</td>
<td>27.7%</td>
<td>27.7%</td>
<td>0%</td>
<td>36</td>
<td>100%</td>
</tr>
<tr>
<td>Water</td>
<td>2.8%</td>
<td>2.8%</td>
<td>16.7%</td>
<td>36.1%</td>
<td>41.7%</td>
<td>0%</td>
<td>36</td>
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<td>Energy</td>
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<td>2.8%</td>
<td>8.3%</td>
<td>30.6%</td>
<td>58.3%</td>
<td>0%</td>
<td>36</td>
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<tr>
<td>Products</td>
<td>11.1%</td>
<td>11.1%</td>
<td>22.2%</td>
<td>22.2%</td>
<td>33.3%</td>
<td>0%</td>
<td>36</td>
<td>100%</td>
</tr>
<tr>
<td>By-products</td>
<td>16.7%</td>
<td>19.4%</td>
<td>30.6%</td>
<td>16.7%</td>
<td>13.9%</td>
<td>2.8%</td>
<td>36</td>
<td>100%</td>
</tr>
<tr>
<td>Solid Waste</td>
<td>8.3%</td>
<td>13.9%</td>
<td>36.1%</td>
<td>16.7%</td>
<td>24.3%</td>
<td>0%</td>
<td>36</td>
<td>100%</td>
</tr>
<tr>
<td>Hazardous Waste</td>
<td>19.4%</td>
<td>8.3%</td>
<td>33.3%</td>
<td>13.9%</td>
<td>22.2%</td>
<td>2.9%</td>
<td>36</td>
<td>100%</td>
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<tr>
<td>Wastewater</td>
<td>19.4%</td>
<td>8.3%</td>
<td>27.7%</td>
<td>19.5%</td>
<td>22.3%</td>
<td>2.8%</td>
<td>36</td>
<td>100%</td>
</tr>
<tr>
<td>Air Emissions</td>
<td>16.7%</td>
<td>19.4%</td>
<td>24.3%</td>
<td>13.9%</td>
<td>22.2%</td>
<td>2.8%</td>
<td>36</td>
<td>100%</td>
</tr>
</tbody>
</table>

Note: One respondent was unsure of the facts of this question
Table 2: The generation, record and accounting for monetary environmental information; where, (1) is extremely low, (2) low, (3) somewhat high, (4) high and (5) extremely high.

<table>
<thead>
<tr>
<th>Category</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>Total</th>
<th>Total %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material Costs of Product Outputs</td>
<td>8.1%</td>
<td>21.6%</td>
<td>16.2%</td>
<td>24.3%</td>
<td>24.3%</td>
<td>5.4%</td>
<td>37</td>
<td>100%</td>
</tr>
<tr>
<td>Material Costs of Non-Product Outputs</td>
<td>8.1%</td>
<td>35.1%</td>
<td>18.9%</td>
<td>13.5%</td>
<td>18.9%</td>
<td>5.4%</td>
<td>37</td>
<td>100%</td>
</tr>
<tr>
<td>Waste &amp; Emission Control Costs</td>
<td>18.9%</td>
<td>24.3%</td>
<td>16.2%</td>
<td>8.1%</td>
<td>24.3%</td>
<td>8.1%</td>
<td>37</td>
<td>100%</td>
</tr>
<tr>
<td>Prevention and other Environmental Management Costs</td>
<td>16.2%</td>
<td>27.0%</td>
<td>21.6%</td>
<td>10.8%</td>
<td>21.6%</td>
<td>2.7%</td>
<td>37</td>
<td>100%</td>
</tr>
<tr>
<td>Research &amp; Development Costs</td>
<td>16.2%</td>
<td>13.5%</td>
<td>40.5%</td>
<td>8.1%</td>
<td>21.6%</td>
<td>0%</td>
<td>37</td>
<td>100%</td>
</tr>
<tr>
<td>Less Tangible Costs</td>
<td>35.1%</td>
<td>21.6%</td>
<td>16.2%</td>
<td>5.4%</td>
<td>16.2%</td>
<td>2.7%</td>
<td>37</td>
<td>100%</td>
</tr>
<tr>
<td>Environmental operating expenditures</td>
<td>13.5%</td>
<td>32.4%</td>
<td>16.2%</td>
<td>10.8%</td>
<td>18.9%</td>
<td>8.1%</td>
<td>37</td>
<td>100%</td>
</tr>
<tr>
<td>independently of other operating expenditures</td>
<td>13.5%</td>
<td>32.4%</td>
<td>16.2%</td>
<td>10.8%</td>
<td>18.9%</td>
<td>8.1%</td>
<td>37</td>
<td>100%</td>
</tr>
<tr>
<td>Environmental capital expenditures</td>
<td>5.4%</td>
<td>35.1%</td>
<td>21.6%</td>
<td>13.5%</td>
<td>13.5%</td>
<td>10.8%</td>
<td>37</td>
<td>100%</td>
</tr>
<tr>
<td>tracked independently of capital expenditures</td>
<td></td>
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</tbody>
</table>
4. EMA implementation framework for South Africa

The EMA framework is developed around four background paradigms:

Paradigm 1- Developing vs developed country: where South Africa has large world class companies with developed country characteristics including environmental impacts that the developing country cannot deal with.

Paradigm 2-Government: There are various world class environmental legislations and initiatives but with little capacity and resources for enforcement.
Paradigm 3- Industry: Because of poor enforcement of legislations companies results into easy way out (like litigation) for short term gains that undermines sustainable environmental practices.

Paradigm - Public: Civil society being unaware of environmental or EMA issues and can not advocate against environmental unacceptable practices and do not have the resources to buy environmentally friendly products.
ROLE OF GOVERNMENT
- Informational instruments
- Economic incentive instruments
- Self-regulatory instruments
- Regulatory instruments
- Coorporative instruments
- Policy development
- Policy implementation
- DEAT, DME, DWAF, DST, & NT

ROLE OF INDUSTRY
- Sustainable production patterns
- Compliance with regulations & policies
- Voluntary programmes
- Negotiated agreements
- Code of conduct
- Corporate EMA initiatives
- EMS and CP implementation
- Integrate EMA to EMS, CP and SR
- Information & Reporting
- Assurance Processes
- Employee engagement
- Community engagement
- EMA awareness, education & research

ROLE OF MANAGEMENT ACCOUNTING
- Training and advice
- Development of guidelines, requirement & standards
- Develop and implement an EMA implementation strategy
- Identify, collect, analyse and use physical and monetary EMA information for decision making
- Address the shortcomings of conventional management accounting

ROLE OF PUBLIC
- Pro-active community groups
- Lobby Government for EMA supportive policies
- Public participation in EMA policy development and implementation
- EMA awareness, education and research
- EMA watchdog against unacceptable environmental practice
- Advocacy

ENVIRONMENTAL MANAGEMENT ACCOUNTING
5. Conclusion

• Majority of the elements of physical EMA are in place but not as part of a formal EMA system

• Monetary EMA still at its infancy stage and there is need for policy, guidelines and incentives to promote EMA

• The EMA implementation framework will inform policy pathways for the promotion of EMA by government, industry, accountants and the public.
EMA/SMA is

a journey

not a destination

THANK YOU