

**A MANAGEMENT ACCOUNTING  
STRATEGY FOR MINING REHABILITATION**

by

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## ABSTRACT

Traditional management accounting practices have not made adequate allowance for the allocation of environmental and rehabilitation expenditure. Environmental costs have been hidden and not separated from other overheads, because managements that embrace traditional values, beliefs and mindsets have regarded these costs as unimportant or unnecessary. The preferred method of evaluating input and gains has been in financial terms only, omitting non-financial indicators such as the physical evaluation of levels of pollutants in the air, water and soil. In South Africa legislation is increasingly being promulgated by central authorities with the object of preventing and combating pollution. This trend may result in enormous future financial environmental liabilities and control and failure costs if attention is not given timeously to preventive action.

The objective of this research is to develop a plan for the implementation of a comprehensive management accounting strategy for environmental and rehabilitation management in the mining industry. Apart from its significant contribution to the economy of the country, the mining industry also has an enormous negative environmental impact owing to pollution. This strategy was developed after a literature and empirical investigation of rehabilitation situations in South Africa, Africa and the leading developed countries, including Canada, the United Kingdom, and the United States of America. On the one hand rehabilitation management practices in the rest of Africa stem from a history and culture of inadequate environmental policies, accompanied by improper cost management approaches in both the short and the long term. The highly developed countries, on the other hand, have skills and technologies which have been developed as a result of a culture of awareness of continuous improvement and ecology management. These sets of information, when optimally combined, are indicative of the background culture to behaviour and decision-making.

Major strategies included in this management accounting plan are historical influences, a holistic approach, cost reduction policies, the role of authorities, total quality environmental management, research and development, ethics, the role of management, performance evaluation, reporting, feedback and continuous improvement. Since each individual mining enterprise has its own particular rehabilitation and environmental situation, allowances should be made for differing and changing circumstances within the

broad guidelines of the framework. These strategies are aimed at finding and optimising an equilibrium position between the financial and the non-financial implications of rehabilitation management; the implementation of environmental policies; environmental rehabilitation leadership; and the effect on the natural environment.

A secondary purpose emanating from this comprehensive strategy was to establish bases for adequate environmental management accounting information for management decision making. Decision-making as a result of these information structures would reflect changed cultural and behavioural patterns, which would benefit all interested and affected parties according to the Pareto optimum paradigm.

This study will enhance awareness of the importance of implementing adequate management accounting principles in support of rehabilitation and environmental management in the mining industry.

## OPSOMMING

Tradisionele bestuursrekeningkundige gebruike het nie voorsiening gemaak vir toereikende toedeling van omgewings- en rehabilitasieuitgawes nie. Omgewingskoste was verskuil en is nie onderskei van ander bokoste nie, omdat die bestuur met tradisionele waardesisteme, oortuigings en ingesteldhede hierdie koste onbelangrik en onnodig geag het. Die evaluering van insette en voordele is verkieslik slegs in finansiële terme gedoen, met die weglating van nie-finansiële indikatore soos fisiese evaluasie van besoedelingsvlakke in die lug, water en grond. In Suid-Afrika word toenemend wetgewing gepromulgeer deur die sentrale owerheid ten einde besoedeling te voorkom. Hierdie tendens mag in die toekoms lei tot enorme finansiële verpligtinge en kontrole- en mislukningskoste indien daar nie betyds aandag aan voorkomende optredes gegee word nie.

Die doel van hierdie navorsing is om 'n plan te ontwikkel vir die implementering van 'n omvattende bestuursrekeningkundige strategie vir omgewings- en rehabilitasiebestuur in die mynbedryf. Behalwe vir die beduidende aandeel in die landseconomie, beleef die mynbedryf ook negatiewe aanslae weens besoedeling. Hierdie strategie is ontwikkel na aanleiding van 'n literatuurstudie en 'n empiriese ondersoek na rehabilitasiesituasies in Suid-Afrika, Afrika en die leidende ontwikkelde lande wat Kanada, die Verenigde Koninkryk, en die Verenigde State van Amerika insluit. Enersyds spruit rehabilitasiebestuursgebruike in die res van Afrika voort uit 'n geskiedenis en kultuur van ontoereikende omgewingsbeleidsrigtings, wat gepaard gaan met ondoeltreffende kostebestuursbenaderings oor die kort- en langtermyn. Die hoogsontwikkelde lande het weer vaardighede en tegnologie wat ontwikkel het weens 'n kultuur van bewustheid van voortdurende verbetering en ekologiebestuur. Hierdie groepe inligting behoort optimaal gekombineer te word as aanduiding van die agergrondkultuur wat gedrag en besluitneming bepaal.

Die vernaamste strategieë wat ingesluit word in hierdie bestuursrekeningkundige plan is historiese invloede, 'n holistiese benadering, beleidsrigtings om koste te verminder, die aandeel van die owerhede, totale kwaliteitsomgewingsbestuur, navorsing en ontwikkeling, etiek, die aandeel van bestuur, prestasie-evaluering, verslaglewering, terugvoering en voortdurende verbetering. Aangesien elke individuele onderneming sy eie besondere rehabilitasie- en omgewingsituasie het, behoort aanpassings gemaak te word vir

verskillende en veranderende omstandighede binne die breë riglyne van die raamwerk. Hierdie strategieë word gerig op die verkryging en optimering van 'n ewewigposisie tussen die finansiële implikasies van rehabilitasiebestuur; die implemetering van omgewingsbeleidsriglyne; omgewingsrehabilitasieleierskap; en die uitwerking op die natuurlike omgewing.

'n Bykomende doelwit wat uit hierdie omvattende strategie voortvloei, is om die basis vas te stel vir toereikende omgewingsbestuursrekeningkundige inligting vir bestuursbesluitneming. Besluitneming as gevolg van hierdie inligtingstrukture sal veranderende kulturele en gedragspatrone weerspieël wat tot voordeel van alle belanghebbendes sal wees volgens die optimum leerstelling van Pareto.

Hierdie studie sal die bewustheid van die belang van die implementering van toereikende bestuursrekeningkundige beginsels laat toeneem en so bydra tot groter ondersteuning van rehabilitasie- en omgewingsbestuur in die mynbedryf.



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